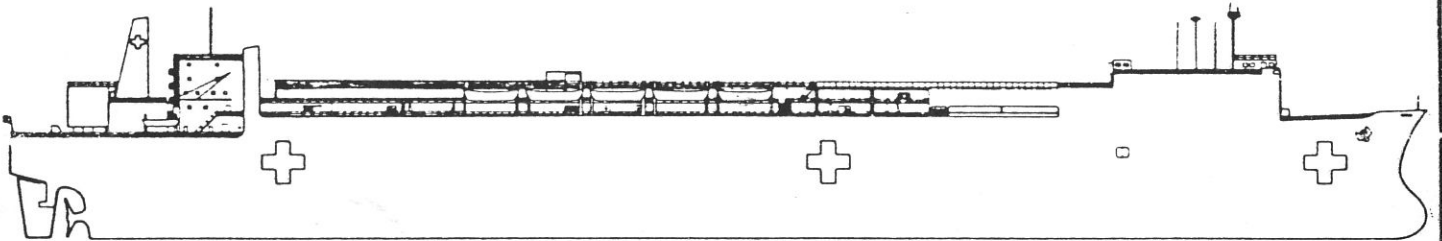


REVISION A 8-86

# INTRODUCTION TO T-AH 19 HOSPITAL SHIP



SUPSHIP SAN DIEGO, CA

## FORWARD

This document was prepared by the Medical Liaison Team at the Supervisor of Shipbuilding, Conversion and Repair, USN, (SUPSHIP) San Diego. It is designed to familiarize new personnel with the general history, mission, and physical characteristics of the T-AH 19 Class Hospital Ship. It is not a statement of medical department or Navy policy and should not be represented as such. Some of its information concerns general ship operation and details but the primary thrust is toward the hospital functions and capabilities.

SUPSHIP San Diego's involvement in the conversion process of the T-AH 19 Class Hospital Ship is extensive. This involvement includes but is not limited to:

- Administering Navy's Hospital Ship Conversion contract with NASSCO.
- Monitoring and reporting the progress of the conversion to higher authority (NAVSEA PMS 383).
- Evaluating possible problem areas in design and construction and recommending changes as required.
- Advising NASSCO on military and medical requirements of the Hospital Ships.
- Recommending changes as needed to both the Initial Outfitting List (IOL) and Authorized Medical Allowance List (AMAL).
- Assisting with and observing the outfitting of the T-AHs.
- Preparing for the arrival and smooth integration of the Navy ROS Cadre crew.

The assignment of a full time medical staff to SUPSHIP San Diego is a first and was prompted by the need to provide full-time on-site technical assistance to the Supervisor. Personnel include:

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USN, San Diego

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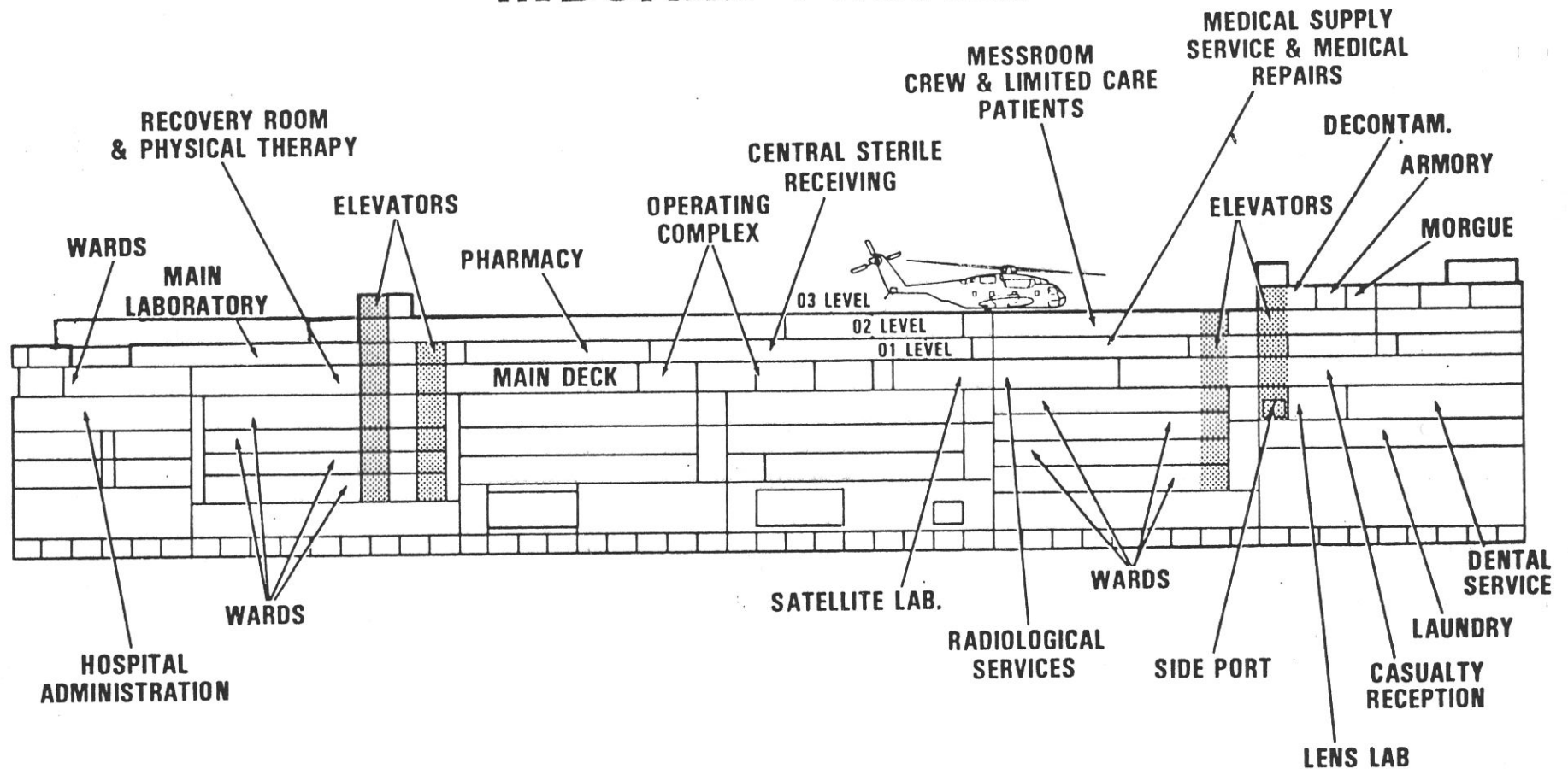
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DRAWINGS/ILLUSTRATIONS OF THE VARIOUS HOSPITAL SPACES ARE A GENERAL REPRESENTATION OF THE SPACES DEPICTED. THEY ARE NOT TO SCALE AND DO NOT REFLECT ALL OF THE CONFIGURATION CHANGES THAT HAVE BEEN MADE WITHIN EACH DEPARTMENT.

# POINTS OF CONTACT

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## INBOARD PROFILE



## INTRODUCTION TO THE T-AH 19 CLASS HOSPITAL SHIP

### 1.0 INTRODUCTION

#### 1.1 History.

a. Not since the end of the Vietnam War has the Navy had an afloat medical capability to provide up to date medical and surgical care to our Marine Task Force, deployed Navy fleet activities and the Rapid Deployment Force. This lack has been keenly felt by military medical planners since the late 1970s.

b. At that time, planning called for medical operations to be a secondary task of amphibious type ships. Commanders of these vessels were tasked with the responsibility of providing initial medical care to battle casualties. Surgical care could only be provided on aircraft carriers and LHAs or LPHs with embarked surgical teams. However, amphibious ships do not normally participate in fleet operations nor are their services available once a beach-head is secured. Additionally, their medical services are extremely limited both in the type of care which can be provided and the number of casualties which can be treated. It was felt that the acute care required could only be provided by hospital ships. Thus, acquisition of the T-AH 19 Class Hospital Ship was approved.

c. The USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20) follow a long line of hospital ships, dating back to the Civil War. During World War II, over a dozen hospital ships and hospital transports were utilized in addition to numerous other smaller craft converted to evacuation control ships and ambulance boats.

d. Two hospital ships served during the Vietnam War. USS REPOSE arrived off Chu Lai in February, 1966 and until her final departure in March, 1970, seldom departed the combat area. She received more than 24,000 patients including 9,000 battle casualties. Over 20,000 surgical procedures were performed on more than 8,000 patients in the main operating rooms. USS SANCTUARY (AH-17), during 1970, received 6,300 patients and treated over 10,000 outpatients.

e. The value of hospital ship support to fleet operations was further demonstrated by REPOSE when in 1967 she rendered assistance to USS FORRESTAL (CVA-59) after a devastating fire aboard the carrier in the Gulf of Tonkin.

#### 1.2 Requirements.

a. Using past experiences as a guide, planning criteria for the T-AH 19 Class Hospital Ship included the following:

(1) A peak admission rate of 300 patients per 24 hours per ship.

(2) An average admission rate of 200 patients per 24 hours per ship.

(3) Approximately 60 percent surgical and 40 percent DNBI (Disease Non-battle Injury).

(4) Admission and evacuation policy could be assumed to be 2 to 9 days from admission to either return to duty or transfer to another facility. An average stay of 5 days per patient is planned.

### **1.3 Summary.**

a. With the addition of MERCY and COMFORT to the fleet, there is now an afloat acute surgical care capability available to support U.S. Forces that is the equal of many of the most modern trauma care facilities. In terms of patient accommodation, each ship will be the largest military hospital in the world.

### **2.0 MISSION**

**2.1 Primary Mission.** To provide acute medical and surgical care in support of amphibious task forces, USMC, forward deployed Navy units ashore and afloat, as well as other military services located in areas where hostilities may be imminent. The T-AH 19 Class Hospital Ship shall accomplish the following:

- a. Receive patients suffering from wounds, disease or non-battle injury.
- b. Provide surgical and medical care to patients until they can be returned to duty or evacuated to other overseas acute care facilities or to CONUS for further treatment.
- c. Provide a safe, stable, mobile platform out of imminent danger for carrying out the assigned mission.
- d. Provide all necessary personnel, services and facilities required for the support of the medical command.
- e. Be able to operate the full medical facility while at sea, day and night.

**2.2 Secondary Mission.** To provide a surgical hospital asset available for use by other U.S. government agencies involved in relief operations, in support of evacuation of U.S. dependents, if necessary; and acute care training operations.

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### **3.0 SHIP CHARACTERISTICS**

#### **3.1 General.**

a. The MERCY and COMFORT are the result of a conversion acquisition project planned for operation by the Military Sealift Command (MSC). Two San Clemente Class crude oil supertankers were converted to a passenger configuration specifically designed to provide combat medical support. Commercial procedures have been used in the contract conditions and govern Navy involvement in the total process, including inspection, documentation, and logistics support.

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b. The contractor, National Steel and Shipbuilding Company (NASSCO), utilized a modular system of construction first introduced during World War II. By this method, the interior holds of the tankers were replaced by units fabricated outside the ship and lifted into place. The engine systems were refurbished but not replaced. Using this technique and two relatively new ships, NASSCO is moving to complete the hospital ships ahead of the contract delivery dates. (Current contract delivery dates: T-AH 19 - Feb 87 and T-AH 20 - Nov 87, modified to 15 DEC 86 and 15 MAY 87 respectively. These dates may slip due to contract modifications for automated data processing equipment, CATSCAN installation and additional medical supply storage space.)

c. The hospital ship is capable of a minimum sustained speed of 17.5 knots with an endurance of 13,420 nautical miles. Since it is designed to operate with other elements of the Navy, it is capable of replenishment (RAS, FAS and VERTREP) from fleet oilers and supply ships normally used by the Navy, giving it worldwide range. Figure 3-1 and Appendix A, the Summary Fact Sheet, give more data concerning the capability of the ship systems and size of the ship.

#### PRINCIPAL CHARACTERISTICS

Length Overall.....	894 ft.-0 in.
Length Between Perpendiculars.....	855 ft.-0 in.
Draft, Design (Bottom of Keel).....	32 ft.-9 in.
Displacement at Design Draft.....	69,360 Long Tons
Light Ship Weight.....	24,712 Long Tons
DFM Tankage.....	5,747 Tons
Fresh Water Tankage.....	1,525 Tons
Main Type of Propulsion Machinery.....	Single Screw, Geared Steam Turbine
Shaft Horsepower (ABS Power).....	24,500

3-1

### 3.2 Crew Strength.

a. Manning Concept. The manning concept for the T-AH class ships includes two ROS crews (MSC and Navy), a civilian MSC operational crew, the Military Detachment (MILDET) Medical staff and the MILDET Support staff. U.S. Navy manpower requirements are documented in the Preliminary Ship Manpower Document (PSMD) developed in accordance with current OPNAV manpower and training policies. MSC personnel requirements have been identified in the proposed MSC Manning Scale for T-AH 19 Class Hospital Ship.

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#### b. ROS CREWS.

(1) A twenty-one man civilian MSC ROS crew of 5 Officer, 6 Chief Petty Officers, and 10 other personnel of the type listed in figure 3-2 will be permanently attached to the T-AH to perform the required maintenance assigned to MSC during ROS. These personnel will become part of the MSC operation crew during full operation status of the T-AH.

### SHIP'S COMPLEMENT (MSC) ROS

<u>Function Title</u>	<u>Rank/Rate</u>	<u>QTY</u>
Master	officer	1
2nd Officer (day)	officer	1
Boatswain	chief petty officer	1
Able seaman/maintenance	other rating	1
Ordinary seaman	other rating	1
Chief Engineer (day)	officer	1
1st Asst Engineer (day)	officer	1
2nd Asst Engineer (day)	officer	1
Chief Electrician	chief petty officer	1
Refrigeration Engineer	chief petty officer	1
Plumber-machinist	chief petty officer	1
Unlicensed junior Engineer (day)	chief petty officer	1
Oiler	other rating	1
Wiper	other rating	1
Baker	chief petty officer	1
Night cook and baker	other rating	1
Assistant cook	other rating	1
3rd pantryman	other rating	1
Utilityman	other rating	1

3-2

(2) A thirty-three man Navy ROS crew of 5 officers and 28 enlisted personnel of the type list in figure 3-3 will be permanently attached to the T-AH to perform the maintenance and administration assigned to the Navy. These personnel will become part of the MTF medical staff and MTF support staff during full operation of the T-AH.

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### SHIP'S COMPLEMENT (NAVY) ROS

<u>Function Title</u>	<u>RANK/RATE</u>	<u>DESIG/NOBC/NEC</u>	<u>QTY</u>
Officer-In-Charge	CDR	2300/9436	1
Supply Officer	LCDR	2300/1918	1
Medical Operations	LT	2300/0800	1
Nurse Supervisor	LCDR	2900/0932	1
Nurse Supervisor	LT	2900/0932	1
Independent Duty HM	HMC	8425	1
Independent Duty HM	HM1	8425	1
Dental Repair Tech	DT1	8732	1
Bio-Med Repair Tech	HMC	8478	1
Bio-Med Repair Tech	HM1	8478	3
Bio-Med Repair Tech	HM2	8478	1
Pharmacy Technician	HMC	8482	1
Pharmacy Technicain	HM1	8482	1
Laboratory Technician	HMC	8506	1
Laboratory Technician	HM1	8506	1



### SHIP'S COMPLEMENT (NAVY) ROS (CONT)

<u>Function Title</u>	<u>RANK/RATE</u>	<u>DESIG/NOBC/NEC</u>	<u>QTY</u>
X-ray Technician	HM1	8452	1
Operating Room Tech	HM2	8483	1
Operating Room Tech	HM3	8483	1
General Duty Corpsman	HM3	0000	3
General Duty Corpsman	HN	0000	4
Mess Manager	MSCM	0000	1
Personnel Assistant	PN1	0000	1
Admin Assistant	YN1	0000	1
Supply	SK1	0000	1
O2N2 Plant Operator	MM1	4283	1
O2N2 Plant Operator	MM2	4283	1

3-3

#### c. Operational Manning.

(1) MSC Operation crew. The proposed MSC manning scale specifies a crew of 99 personnel (19 Officers, 25 Chief Petty Officer, and 55 other personnel).

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(2) Navy Medical Staff. The Medical Treatment Facility (MTF) will be manned when operational, by a U.S. Navy Medical staff consisting of 835 personnel (253 Officers and 582 Enlisted). NMPC has identified and will assign Navy medical personnel consistent with the current manning documents. These personnel will be transferred from shore based commands, primarily Navy Regional Medical/Dental Centers, to fill the billets when the MTF is activated.

(3) Marine Corps Liaison. The Marine Corps Liaison staff will consist of two Marine Corps enlisted personnel.

(4) Navy Support Staff. The MTF Support staff consists of 242 Navy personnel (12 Officers and 230 Enlisted). NMPC has identified and will assign MTF Support staff personnel consistent with the current manning documents. These personnel will be transferred from CONUS shore based commands when the MTF is activated.

#### 4.0 OPERATING STATUS

**4.1 Reduced Operating Status.** Pending their use in a mission related situation the ships will be maintained in a Reduced Operating Status (ROS) in a CONUS port, the T-AH 19 on the West Coast and the T-AH 20 on the East Coast. During the ROS period the ships will be manned as noted above.

**4.2 Full Operating Status.** Within five days from issuance of sailing orders the T-AH 19 Class Hospital Ship can be "Fully Ready" for deployment. This includes the mobilization of all civilian operating personnel, all Navy medical and non-medical support personnel. Once brought to full operating status the ship will be capable of the following:



a. Sustained periods at sea in wartime.

b. Providing 12 operating rooms and 1,000 acute care beds and associated medical support while in Condition I, Battle Readiness. Beds are distributed as follows: Intensive Care - 80 beds, Recovery - 20 beds, Intermediate Care - 280 beds, Light Care - 120 beds and Limited Care - 500 beds.

c. Performing other functions as required to support the hospital and ship in its mission.

d. Continuous readiness Condition III at sea for a sustained period of not more than 60 days.

e. During wartime, extended operations off a hostile beachhead, capable of providing an aviation facility for day and night operations with minimum support of helicopters for both delivery and evacuation of patients to other facilities.

f. Pursuant to requirements for hospital ships as set forth in the Geneva Convention, the ships are unarmed and may be operated only as hospital ships in order to receive protection afforded by the Geneva Convention.

**4.3 Other Operating Status.** The ship may be operated at less than full capability during peacetime for disaster relief operations or in support of U.S. Forces as required and as the situation dictates.

**4.4 Duties.** These duties are subject to approval by Memorandum of Agreement (MOA) between Military Sealift Command and Commander, Naval Medical Command.

a. Duties of the Military Sealift Command during ROS include but are not limited to the following:

(1) Operation, maintenance and repair of all navigation, electronics, deck, main propulsion and auxiliary plant equipment except those assigned to NAVMEDCOM.

(2) Preservation, upkeep and cleanliness of assigned spaces.

(3) Ship security to be provided by a 24-hour watch wherever access to the ship normally can be gained.

(4) Providing a single point of contact for the senior MILDET representative onboard whenever equipment failures or other circumstances dictate the need for assistance or support.

(5) Developing and updating guidelines for visitors aboard ship in conjunction with the Senior Medical Department Representative.

(6) Instituting and implementing procedures and logistic support arrangements to ensure that the ship can be made fully operational at sea in accordance with the standing requirements prescribed by higher authority.

(7) Maintaining the elevators that service the flight deck and hospital areas.

(8) Developing, in conjunction with the Senior Medical Department Representative, requisite emergency station bills to ensure the capability of the ship's force, including the MILDET, to perform firefighting, damage control, abandon ship and other emergency evolutions.

(9) Insuring that sufficient supplies and repair parts for ship operation (excluding food service, laundry and hospital supplies) are maintained on board to facilitate timely transition to FOS.

(10) Maintaining lifeboats, life rafts and davits.

(11) Adherence to U. S. Navy regulations and standards with regard to the handling of food, potable water, sewage, pest control and occupational health and safety.

(12) Feeding and hotel services for the MSC crew.

(13) Providing midday meals to MILDET cadre crew.

b. Duties of the Military Detachment during ROS include but are not limited to the following:

(1) Operation, preservation, maintenance and repair of all hospital equipment.

(2) Inventory management of all medical and dental supplies (AMAL) and Initial Outfitting supplies (IOL).

(3) Care and cleanliness of hospital spaces.

(4) Security of the hospital areas.

(5) Maintaining close liaison with the MSC single point of contact to ensure effective coordination of efforts to maintain the ship and the hospital and to ensure that the requisite support is available.

(6) Responsibility for care and cleanliness of shared spaces to be determined by the Master and MILDET OIC.

(7) Ensuring that MSC is advised of any special evolutions or training which may place unusual demands on the supporting systems or hotel services.

(8) Ensuring that the hospital spaces are maintained in such a state of readiness that they are able to attain a fully operational status.

(9) Ensuring that sufficient supplies for the hospital, including food and laundry supplies, are aboard or provisions are made to load aboard to support transition of the ship to fully operational status.

(10) Assisting the Master in developing and providing manning information for emergency bills.

(11) Care and maintenance of all damage control equipment in assigned spaces.

(12) Preservation and maintenance of the AFFF and HALON spaces and associated equipment.

c. Transition from ROS to FOS without activation of the Hospital Command.

(1) Under certain circumstances, ship systems may be taken from ROS to FOS without the full activation of the Hospital Command. This could include relocation to an alternate berth, scheduled tests and trials for ship systems and transit to a shipyard for a scheduled overhaul. In situations of this nature, systems and equipment necessary for safe and proper operation of the vessel will be fully activated. Those systems which support the hospital will remain in ROS. Members of the MILDET cadre crew, necessary for maintaining the hospital areas in ROS status, will remain with the vessel. Support services for these personnel will be provided by MSC.

d. Transition from ROS to FOS with Hospital Command embarked.

(1) As noted above, a portion of the ROS responsibilities for each of the commands includes sufficient contingency planning and maintenance actions to ensure that transition from ROS to FOS can be effected efficiently and expeditiously. In general, this period will be characterized by a dramatic intensification of ongoing efforts vice an increase in range of responsibility. The focus will be on full activation of ship and hospital systems, the accommodation of the influx of assigned personnel and completing efforts to ensure that they can be supported in the anticipated operational environments for an extended period of time and training in ship environment and safety.

e. Duties of the Military Sealift Command under FOS include but are not limited to the following in addition to their ROS duties:

(1) Safe navigation of the ship and the safety of all personnel embarked.

(2) Manning of all key stations, such as ship control, safety observer and fuel transfer control, during underway refueling, underway replenishment and highline station operations.

(3) Safe storage and accountability for those small arms placed aboard for purpose of providing ship security.

(4) Manning Damage Control Central and Repair 2, 3 and 5.

(5) Manning additional stations as required by the established emergency bills.

(6) Providing certified lifeboat personnel.

(7) Operating the commercial radio facility and the government communications suite.

(8) Providing and manning a shipboard physical security program.

f. During full operation of the ship and the hospital command, the MILDET is responsible for:

(1) Operation of the Hospital Command in accordance with existing policies, directives and contractual arrangements with the MSC crew.

(2) Providing appropriate supplemental, qualified manning for all liftboats and life rafts.

(3) Refueling of helos in an emergency situation.

(4) Manning helo control stations.

(5) Manning the Flight Deck Crash and Salvage Party and 2 decontamination stations.

(6) Providing CBR/DECON monitoring teams for Repair 2 and 3.

(7) Providing damage control investigators for the hospital designated shipboard areas for assignment to Repair 2, 3 and 5.

(8) Manning boat recovery stations as assigned.

(9) Assisting MSC during VERTREP, high line and UNREP evolutions.

(10) Moving hospital supplies and stores to storerooms.

(11) Retaining responsibility and security for all medical supplies.

(12) Providing food service for all personnel aboard.

(13) Providing laundry service for all personnel aboard.

(14) Providing cleaning services for all hospital assigned spaces.

(15) Providing personnel administration, disbursing and postal services for all embarked personnel except MSC crew payroll.

(16) Operating the ship's store.

(17) Providing requisite qualified personnel for emergency stations.

(18) Storage and security of small arms removed from incoming wounded and any ship's allowance small arms drawn from the Master for hospital security purposes or OMAA functions.

(19) Maintenance and preservation of assigned small arms.

(20) Providing emergency medical/dental care and routine sick call to the crew.

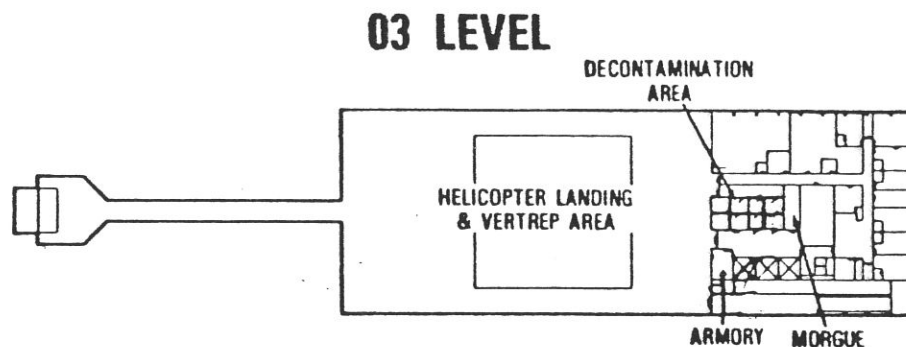
(21) Providing roving patrols for hospital unmanned spaces.

(22) Providing appropriate supplemental qualified manning for ship-board physical security programs.

## **5.0 HOSPITAL CHARACTERISTICS**

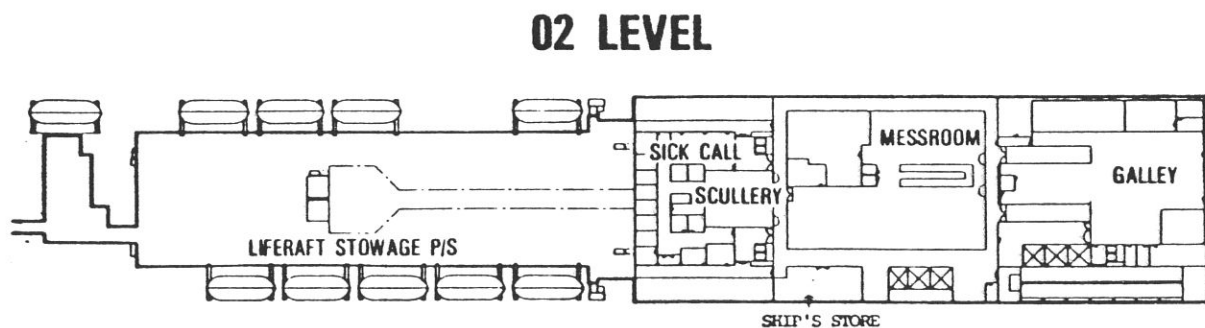
**5.1 General.** The T-AH 19 Class Hospital Ship was designed to accommodate a surgically intense workload and to provide acute care to support that workload. Consideration had to be given to the interdepartmental relationships and the flow of patients, staff, and supplies.

a. On the 03 level is the Helo Deck, Main Decontamination Station, Armory and Morgue.



5-1

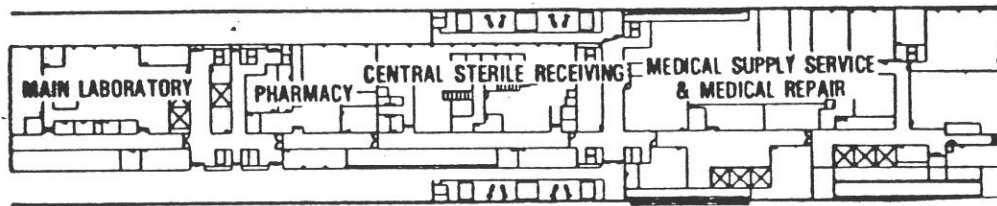
b. The 02 level is where the Galley, Messdeck, and other main food service preparation spaces are located. Also located on this level is the staff Sickcall Clinic and Ship's Store.



5-2

c. On the 01 level is the general, medical and food service storerooms, Medical Supply and Medical Repair, Central Sterile Receiving, Pharmacy and the Main Laboratory. Being located on this deck these services can best serve the hospital while being out of the general areas of patient flow.

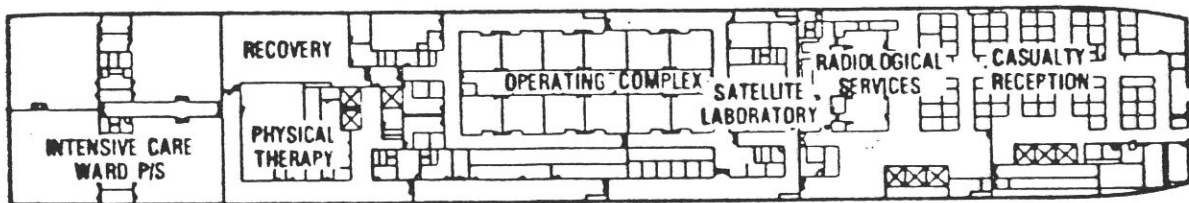
## 01 LEVEL



5-3

d. No where is the results of the design criteria better illustrated than on the Main Deck. All necessary services to directly support the surgical workload are located here. They are, from fore to aft: Casualty Reception, Radiology, Satellite Lab (Blood Bank), Operating Complex, Recovery, Physical Therapy (Burn Unit) and Intensive Care wards. This arrangement greatly decreases the time needed to move patients from one essential service to the next by eliminating vertical movement.

## MAIN DECK



5-4

e. Below the Main Deck the hospital is divided into 6 "Holds". Hold 1 contains the Dental Service, Lens Laboratory and Laundry. Also located in this hold on the portside is a receiving area with hoist for lifting patients from small boats, a patient decontamination station and a ramp which runs from the 03 level to the 2nd platform. Holds 2 and 5 are wards. Holds 3, 4 and 6 contain crew berthing and hospital administration.

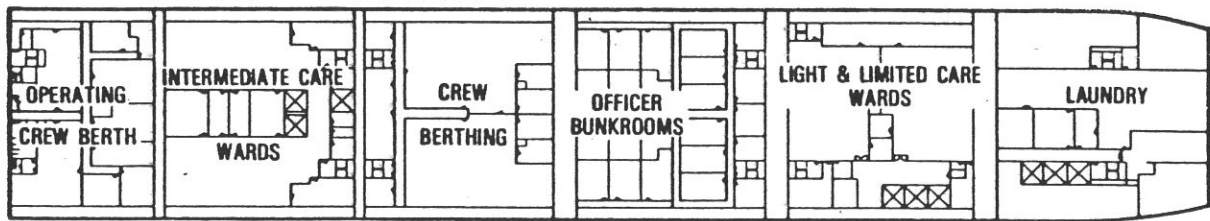
## 1ST PLATFORM



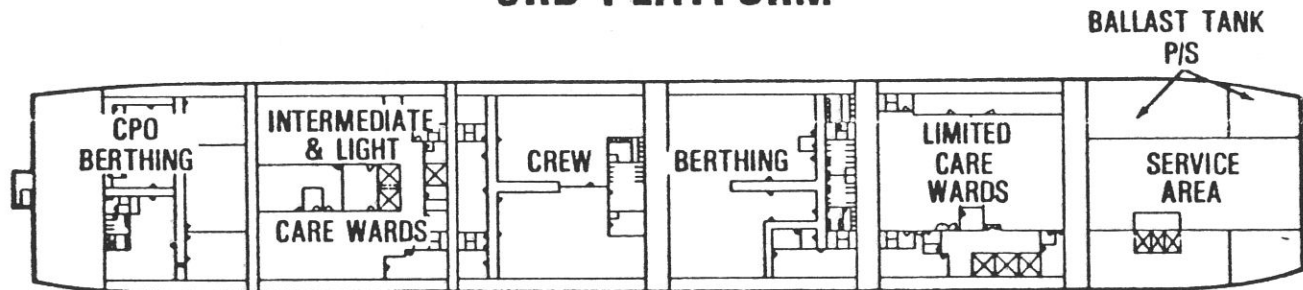
5-5a



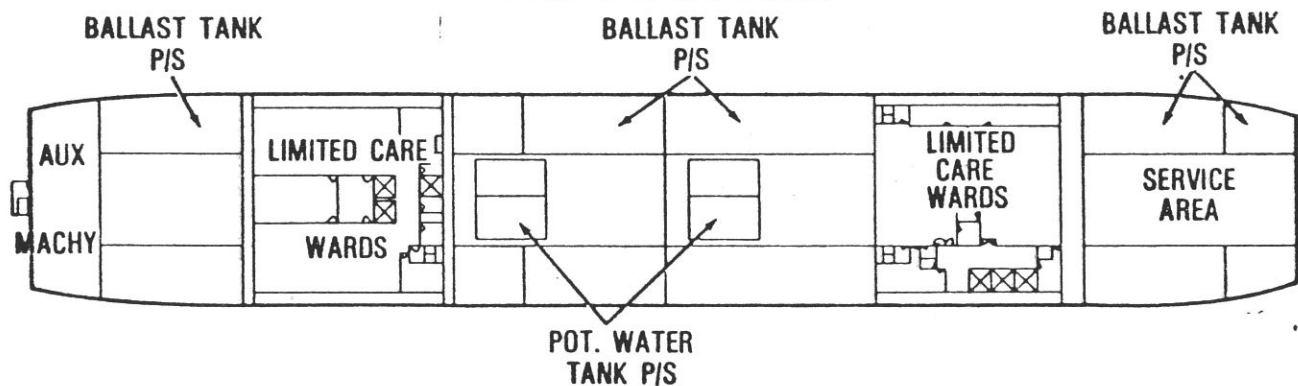
## 2ND PLATFORM



## 3RD PLATFORM



## 4TH PLATFORM



5-5b

f. The use of elevators, dumbwaiters and cart lifts facilitate the flow of patients, staff and material to the medical and surgical care areas. In addition, stairwells are located both port and starboard in all holds of the ship. The hospital areas are explained in greater detail in the following paragraphs.

**5.2 Medical Services.** These services constitute the hospital core and provide service directly or indirectly to patient care from receipt to discharge or transfer.

a. **Casualty Reception.** This service is the receiving point for all patients transported by boat or helicopter. It consists of the Ø3 level receiving point, Helo Deck; the first platform receiving point and the Casualty Reception area on the Main Deck.

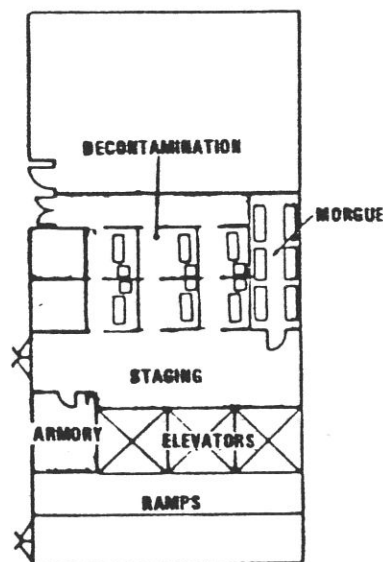
(1) The Ø3 level Helo Deck is the primary point of patient entry. It is constructed so that one helicopter can be landed on deck at a time. How-

ever, the deck is large enough to accommodate two helicopters temporarily with one helo moved to the side while another is landed.

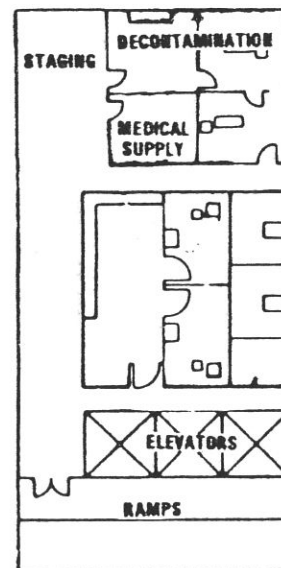
(2) The decontamination station on the 03 level is provided with three compartments each divided into a 'contaminated' side (port) and a 'clean' side (starboard) with a connecting inner door. These are compartments 03-39-2, 03-40-2 and 03-41-2 (contaminated side) and 03-39-1, 03-40-1 and 03-41-1 (clean side). Each space can accommodate one patient on a litter and have enough room for staff. Exhaust air goes directly overboard. A metal table, hand-held fresh water hoses and deck drains which discharge overboard, are provided. Incoming patients requiring cleanup due to NBC agents enter this area via the port passageway. Once decontaminated they are moved to the clean side, treated as necessary and then sent to Casualty Reception on the main deck. Prior to the patient going to Casualty Reception all weapons are removed and stored in the Armory, compartment 03-41-3.

## DECONTAMINATION, MORGUE, ARMORY

03 LEVEL



1ST PLATFORM



5-6

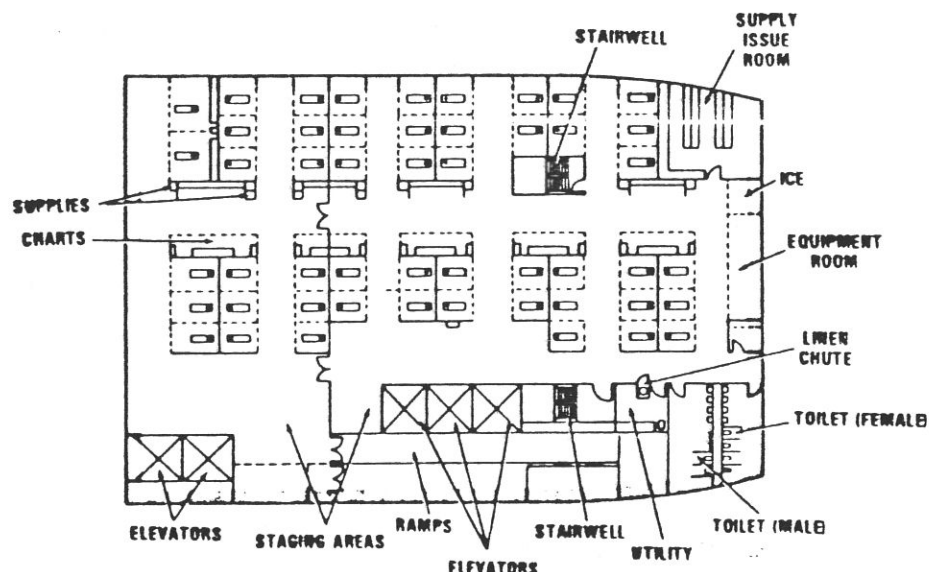
(3) Patients received by small boat enter the ship via the patient hoist at the port access on the first platform. These patients can be decontaminated, if necessary, in the patient decontamination station, compartment 2-39-4, equipped similarly to the 03 level. Valuables and firearms are collected and transferred to storage on the main deck and 03 level Armory, respectively.

(4) Casualty Reception, compartments 1-29-0 and 1-42-0 on the Main Deck, is easily accessible from the Helo Deck or portside access by elevator, ramp or stairwell. It is provided with a staging area for triage officers to categorize patients, provide a clinical control point for the admission process, and initiate the patient-care record. Patients not already on mobile stretchers at this point are transferred to one. Fifty treatment positions are available for emergency treatment, resuscitation, minor surgery and triage determination. Seventeen of these positions are equipped to be used as fresh-



water washdown areas for general cleaning of casualties utilizing 7 overhead hose stations. The treatment positions are arranged into groups of from 3 to 6 and have equipment and supplies common to each. Each position has hard-piped oxygen and suction, portable surgical light, portable suction, electrical outlets and access to portable cardiac monitors. Lock-down devices are provided to secure the stretchers in place. Fifteen positions are provided with fixed operating lights for the most critical patients.

## CASUALTY RECEPTION



5-7

(5) Each group of patient positions is provided with a charting area, supply and medication area, sink and X-ray film illuminators. Additional support areas for stretchers, supplies and portable equipment are located on the perimeter of the Casualty Reception area in order to minimize staff movement between immediate support areas and patient positions. A drop safe is available for temporary security of patient valuables. The drop safe operates similar to a bank night deposit system.

(6) Two of the 50 treatment positions are equipped for the application of casts and located adjacent to the Radiological Services to speed transfer of patients to and from X-ray.

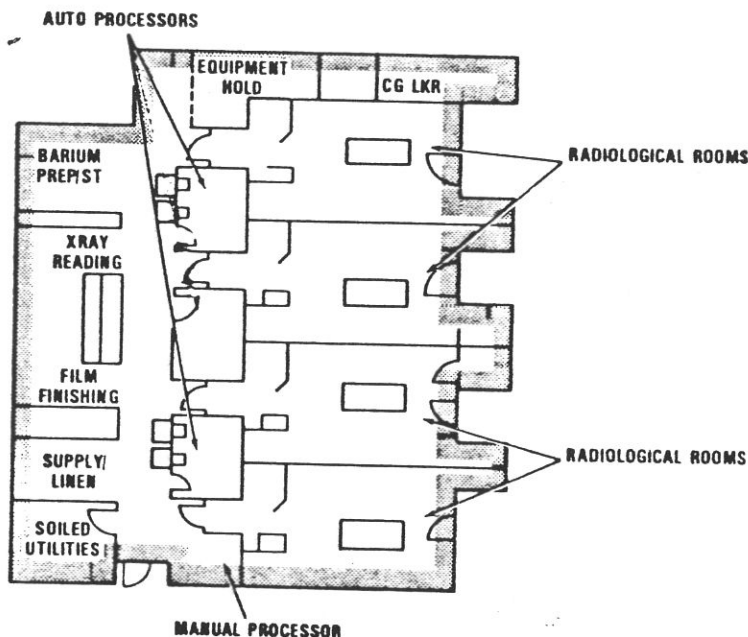
(7) An additional work station within the staging area is located at the aft end of Casualty Reception to control the flow of patients to all other parts of the medical facility. A supervisor's office is also provided.

b. **Radiology Service.** The Radiology Service provides routine X-ray and special diagnostics studies to all clinical care areas. It is located between frames 47 and 51 on the main deck, between Casualty Reception and the Satellite Laboratory.

(1) There are four X-ray examination rooms each of which is equipped with a 600 MA radiographic system with fluoroscopy and image intensification

capability. One X-ray room has a separate Franklin Head unit, one a Tomography X-ray attachment and one with a rapid film changer. Control of the system generators is provided in separate alcoves. A clear overhead height of 10 feet is provided, and each room is radiation shielded to meet regulatory body requirements.

## RADIOLOGICAL SERVICES



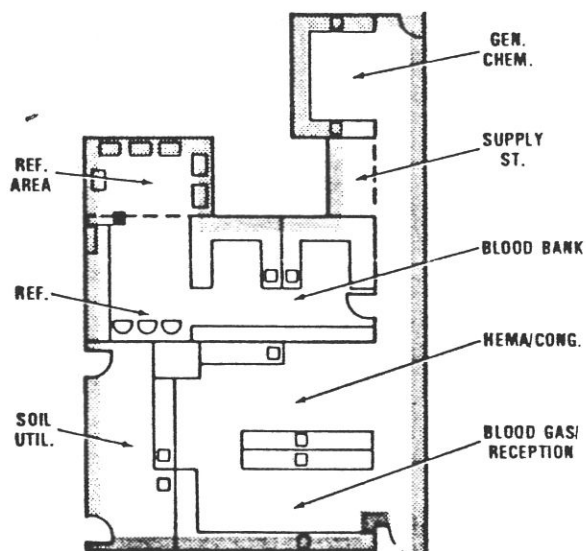
5-8

(2) Three darkrooms are provided. Two rooms have 2 automatic film processors each, and the third room houses the manual processing facilities. Film bins are in each room to hold unexposed film. Exposed cassettes are transferred from each X-ray room to the automatic process darkrooms and the Manual processor through a pass box.

(3) Support facilities include toilets, X-ray reading areas for both technicians and radiologists, film storage, a barium prep pantry, medical supply and linen holding, soiled utility room, portable equipment holding, and an administrative office. Direct access to the Operating Complex via the gowning area is provided. A holding area for crash carts is also provided. Film illuminators are provided near the darkrooms and in a reading area for the radiologists. Film storage is located in the reading area.

c. Satellite Laboratory and Blood Bank. A satellite laboratory located on the Main Deck between frames 51 and 53 serves the Casualty Reception and Operating Complex. The Blood Bank, blood gas reception and other hematological and chemistry services necessary for high priority procedures are located here. The laboratory is designed on an "open plan" to maximize flexibility in the use of space. Each piece of laboratory equipment is secured to the deck or countertop as required to prevent movement caused by ship motion which may damage the equipment or compromise test results.

## SATELLITE LABORATORY



5-9

d. **Operating Complex.** This service is the primary surgical complex for the medical treatment facility. Located between frames 55 and 59 on the Main Deck, it is responsible for administering anesthetics, performing emergency and scheduled surgery, and transferring patients to post-surgical observation areas.

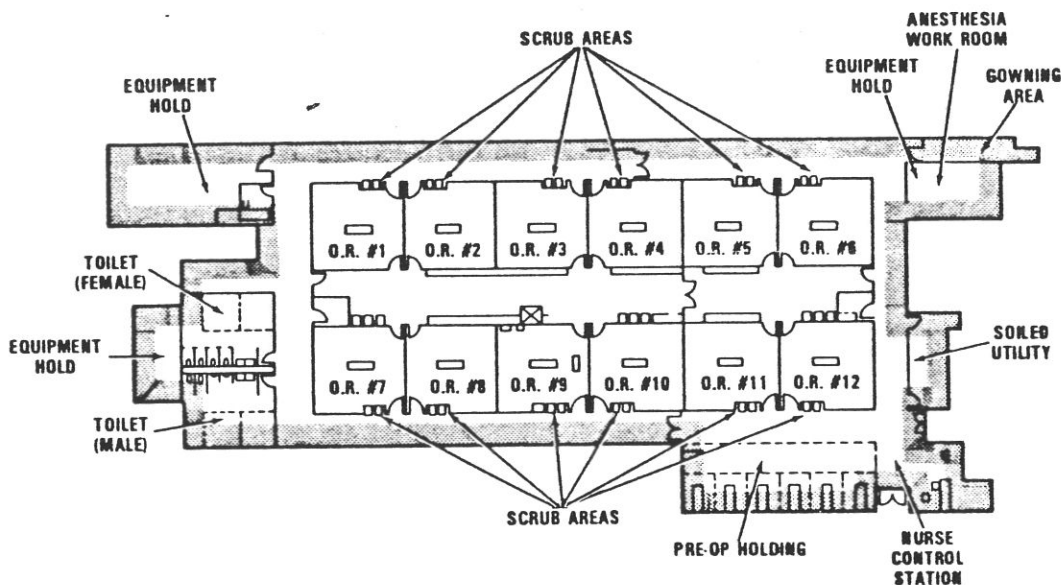
(1) Each of the 12 single table operating rooms is equipped with hard-piped oxygen and suction. The operating table has an X-ray table top and urological accessory tray. Support facilities provided include scrub areas, anesthesia workroom, male and female toilet, shower and dressing rooms, a pre-operative patient holding area, clean and soiled material holding/handling rooms and portable X-ray service.

(2) The Operating Complex itself is designed around a clean work core, where all sterilized supplies are held and distributed into the operating rooms. Most staff and all patients enter the operating rooms from a peripheral passageway. All supplies for the Operating Complex are received from Central Sterile Receiving via a dedicated "clean" cart lift into the clean work core. The size of the cart lift allows the movement of loaded carts to and from the clean work core. The core also provides centralized support equipment such as blanket and solution warmers, ice machines, blood gas analyzers and autoclaves.

(3) Soiled materials (instruments, utensils, linen, trash) is removed from the operating room to a soiled utility room via the peripheral passageway. A second "soiled" dedicated cart lift in this room transfers these materials to Central Sterile Receiving for disposition. Pathological waste

from the Operating Complex is held on a secure locked cart for periodic controlled removal to a pathological incinerator located on the 1st Platform Deck in Hold 6.

## OPERATING COMPLEX



5-10

(4) A six position patient holding area for use in the event that there are patients awaiting surgery is located near the nursing control station of the complex.

(5) Scrub stations equipped with a knee/thigh operated control are located near the entrance to each operating room. Scrub facilities are arranged to minimize incidental splatter on nearby personnel or supply carts. Personnel at the scrub stations are provided with viewing panels to permit observation of the operating room from the scrub sink.

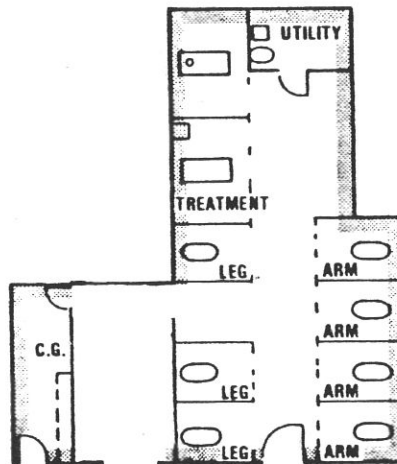
(6) An anesthesia workroom is provided for equipment maintenance and supply holding. This room also has work counters as well as a desk area for anesthesia administrative work.

e. **Physical Therapy.** The Physical Therapy, compartment 1-72-0, is located on the main deck near the Intensive Care Wards and close to the elevators leading to the aft Intermediate Care Wards. This area is also intended to provide support in the treatment of burn patient.

REV.  
A

(1) A control station is provided just inside the unit. The unit includes 4 cubicled extremity whirlpool areas, 2 total body emersion tanks, with two treatment positions for dressing changes following hydrotherapy. One overhead electric hoist with monorail is provided to lift patients into the 2 total body emersion tanks. Also available is a soiled utility room, clean work area for charting, medical supplies and linen storage.

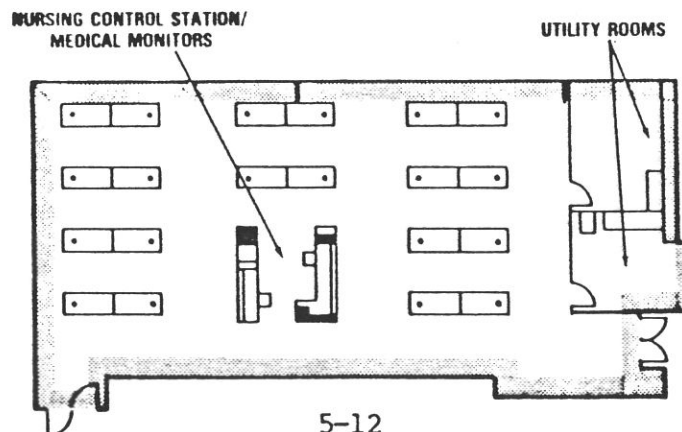
## PHYSICAL THERAPY



5-11

f. **Recovery Room.** The recovery room, compartment 1-72-2, is located aft of the Operating Complex on the main deck and receives patients directly from the Operating Complex.

## RECOVERY ROOM



5-12

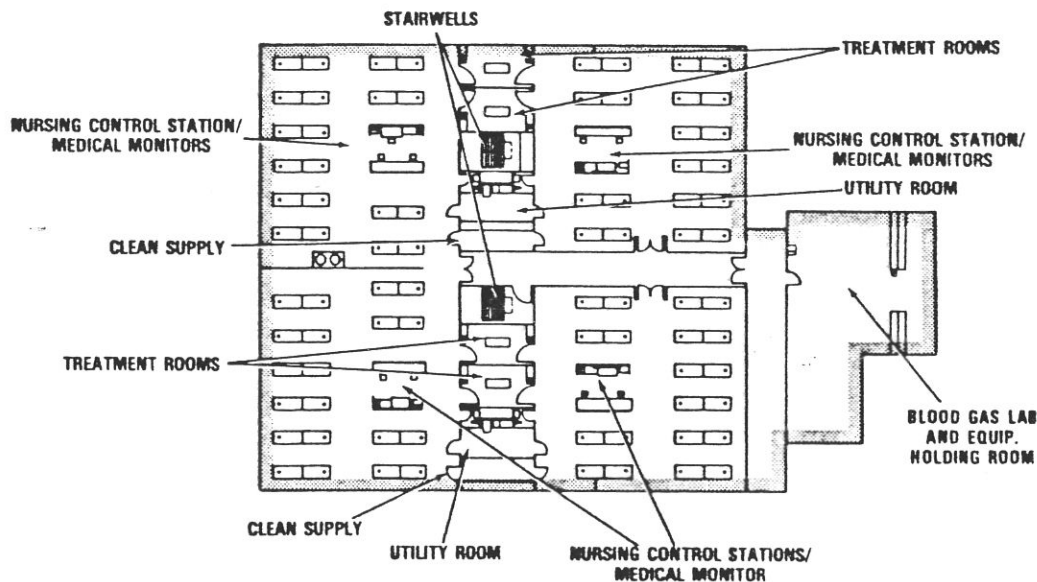
(1) Recovery consists of one ward of 20 single high, wheeled recovery room type stretchers. Each patient position is provided with central oxygen and suction. Patient monitoring equipment is provided at each station for EKG, temperature, pulse and blood pressure monitoring. The stretchers are arranged on eight foot centers with ten foot wide aisles between rows of stretcher positions. Lockdown devices are provided to secure the stretchers in place.

(2) Support space for a nursing station (charting), medications, portable equipment holding, clean supply, ice, linen holding, and soiled utility are provided. The nurses' station is located to provide visibility of all patients. Central monitoring for EKG, temperature, pulse and blood pressure is provided within this location.

(3) The Recovery Room is located in close proximity to the ICUs to facilitate easy patient movement as well as sharing of the following support areas common to all 100 Intensive Care/Recovery Beds: (1) reserve equipment holding including suction machines and ventilators; (2) EKG reading room with desks for medical staff; (3) backup medical supply and linen holding; and (4) blood gas lab/respiratory therapy supply holding.

g. Intensive Care Unit. ICU, between frames 76 and 87, receives critically ill or injured patients from the Operating Complex, Casualty Reception and Recovery. The ICU provides treatment, constant observation, and monitoring to critically ill or injured patients after initial stabilization.

## INTENSIVE CARE UNIT



5-13

(1) There are 80 single high intensive care stretcher positions; compartment 1-76-1 and 1-76-2 each hold 20 positions, and compartment 1-84-0 provides 40 positions. Each stretcher position is provided with central oxygen and suction, and has the capability for connection to installed modular monitoring equipment for EKG, temperature, pulse and invasive or non-invasive blood pressure. The stretchers are arranged on eight foot centers with ten foot wide aisles between rows of stretcher positions. Lockdown devices are provided to secure the stretchers in place.

(2) Adequate support space for each nursing station is provided, including medication storage, portable equipment holding, clean supply, ice, linen holding, and a soiled utility room. The nurses' station is located so as to have visibility of all patients. Central monitoring for EKG, temperature, pulse and non-invasive blood pressure is provided within this location. Some equipment storage is provided in a central area outside of Recovery to be shared with ICU. Nourishment stations provide ice and refrigerated liquids in this area.

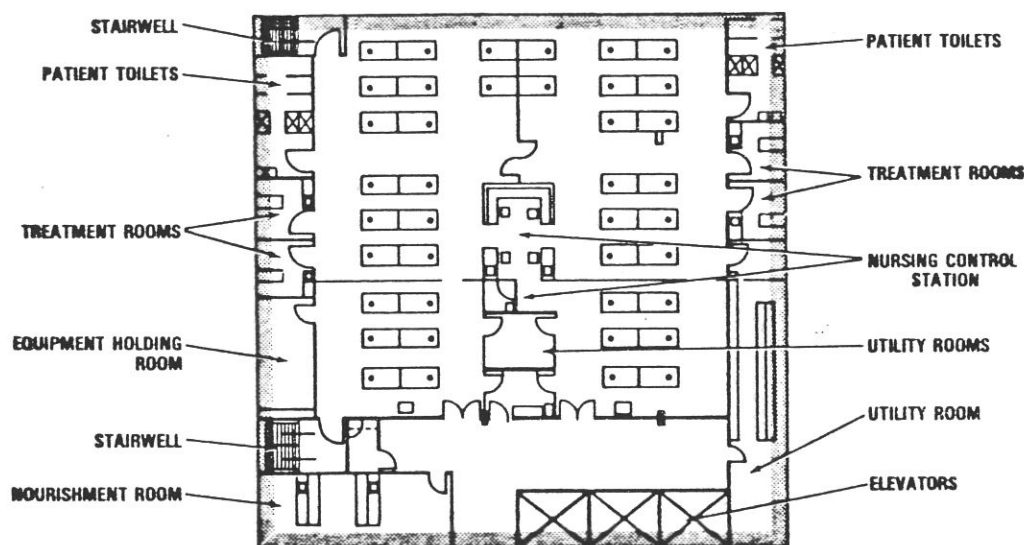


(3) The ICUs are located in close proximity to the Recovery Room to facilitate easy patient movement as well as sharing of support areas common to all 100 Intensive Care/Recovery Beds as noted in 5.2.f.(3) above.

h. Wards. The remaining 900 hospital beds are provided in a combination of single and double-high berths located below the Main Deck. Distribution is as noted in paragraph 4.1.b. These wards are served by three elevators in each of the 2 holds in which they are located and have direct access to the emergency egress routes by stairwells.

(1) Intermediate Care Wards. These wards provide a reduced level of care from the ICUs consistent with the needs of the patient. Patients may be admitted to this ward from Casualty Reception, Recovery or ICU.

### INTERMEDIATE CARE WARD



5-14

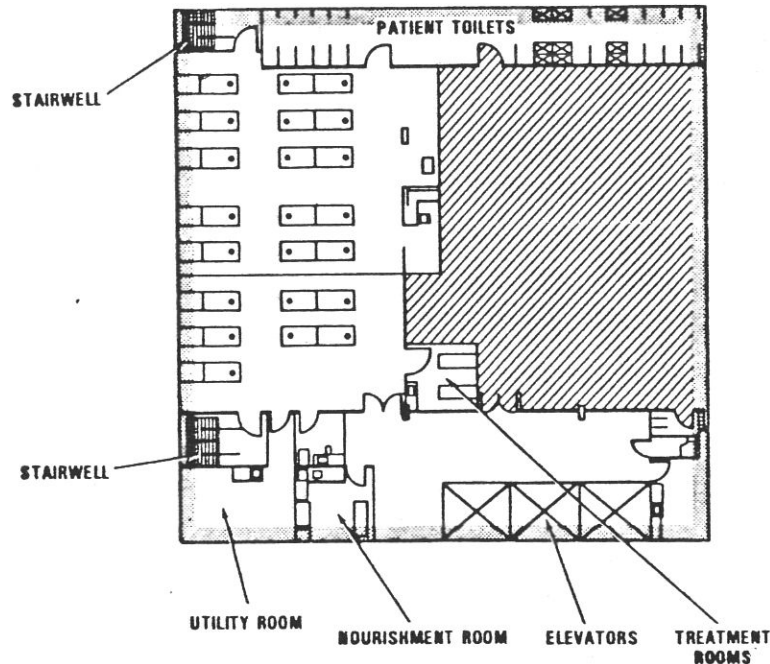
(a) The seven intermediate care wards provide 280 beds of 40 per ward and are distributed as follows: 2-44-0, 40 beds port and 40 beds starboard; 2-71-01, 40 beds port and 40 beds starboard; 3-71-01, 40 beds port and 40 beds starboard; 4-71-01 40 beds port. Each ward is equipped with double-high berths located on 6 foot centers. In addition, each intermediate care ward in hold 5 has 4 single high berths for use by patients requiring specialized care or traction. These berths are near the nurse's station and equipped with a traction frame and accessories.

(b) Support space is provided for a nurses' station, a corpsman work station, two treatment rooms, equipment holding, clean supply rooms, and soiled utility. Some spaces, such as the nourishment room, equipment holding, soiled utility or supply rooms are shared between wards.

(c) The nurses' stations are centrally located to maximize visibility of patients throughout the wards.

(2) **Light Care Wards.** These wards provide a reduced level of necessary care from the intermediate care wards consistent with the needs of the patient. Patients may be admitted to these wards from any ward or Casualty Reception.

### LIGHT CARE WARD



5-15

(a) Two light care wards, 3-47-0 and 4-71-01 starboard, provide 120 beds of 60 per ward. Each ward is equipped with double-high berths located on 6 foot centers.

(b) Support space is provided for a nurses' station, a corpsman work station, two treatment rooms, equipment holding/clean supply holding rooms, and soiled utility. Some spaces such as the nourishment room, equipment holding, soiled utility or supply rooms are shared between wards.

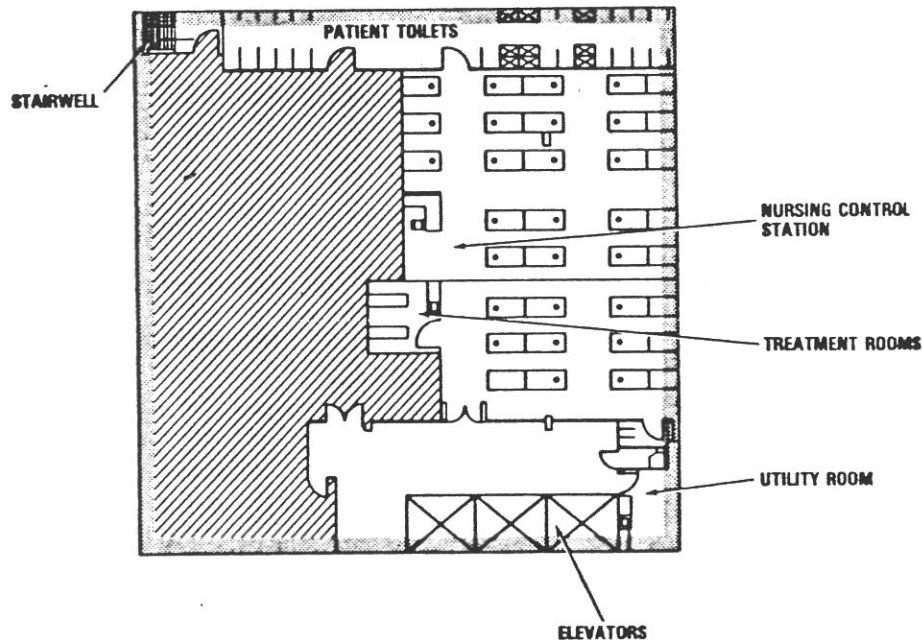
(c) The nurses' stations are centrally located to maximize visibility of patients throughout the wards.

(3) **Limited Care Wards.** These wards provide a reduced level of necessary care from the light care wards consistent with the needs of the patients, all of whom are expected to be ambulatory. Patients may be admitted to these wards from any other ward or Casualty Reception.

(a) Seven limited care wards provide 500 beds and are distributed as follows: 3-43-0 (72 beds), 4-47-0 (72 beds), 4-43-0 (72 beds), 5-43-0 (72 beds), 5-47-0 (72 beds), 5-71-1 (72 beds), and 5-71-2 (68 beds). Each ward is equipped with double-high berths located on 6 foot centers.



## LIMITED CARE WARD



5-16

(b) Support space is provided for a nurses' station, one treatment room with two tables, equipment holding/clean supply holding rooms, and soiled utility. Some spaces are shared between wards, such as the nourishment station, equipment holding, soiled utility or supply rooms.

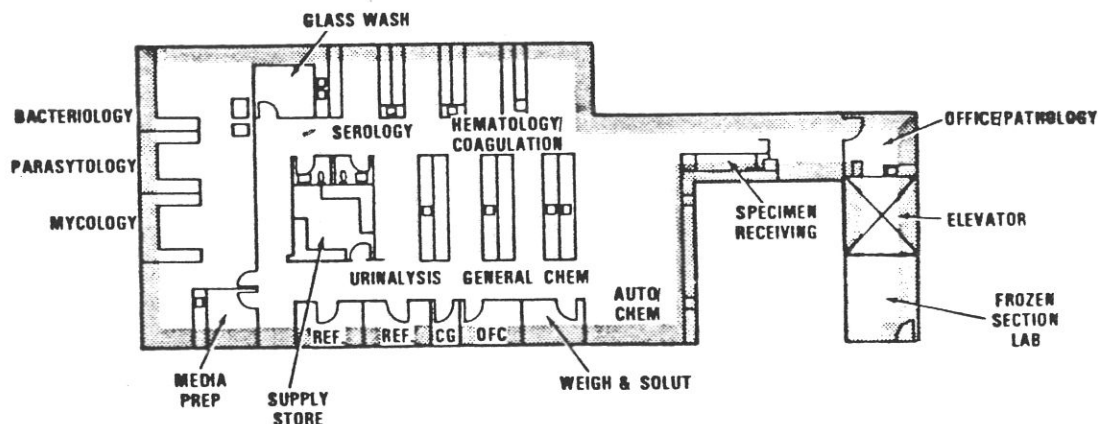
(c) The nurses' stations are centrally located to maximize visibility of patients throughout the wards.

(d) All patients take meals in the dining facility on the 02 level.

i. **Main Laboratory.** The Main Laboratory Complex, compartment 01-72-0, like the Satellite Lab, is designed as an "open plan" laboratory to maximize flexibility in the use of the space. Each piece of laboratory equipment is secured to the deck or countertop as required to prevent or limit movement caused by ship motion which would damage the equipment or compromise the test results.

(1) The main laboratory performs clinical, pathological and chemistry studies associated with laboratory procedures, with the exception of the Blood Bank. It provides routine and high priority procedures for all general wards, ICU, and the Recovery Room. It is located in the aft portion of the ship on the 01 level, where there is minimal patient traffic and where material movement from stores strikedown and staff movement to and from the wards is relatively infrequent. Stairs and elevators are located near this service in order to expedite travel between the Lab, ICU, and the Recovery Rooms.

## MAIN LABORATORY



5-17

j. **Central Sterile Receiving.** This service receives soiled instruments, utensils, linen and trash from surgery, and carts from the hospital facility. It directly supports the need for supplies and reprocessing in the Operating Complex. It re-issues the same equipment in a reprocessed, sterilized state.

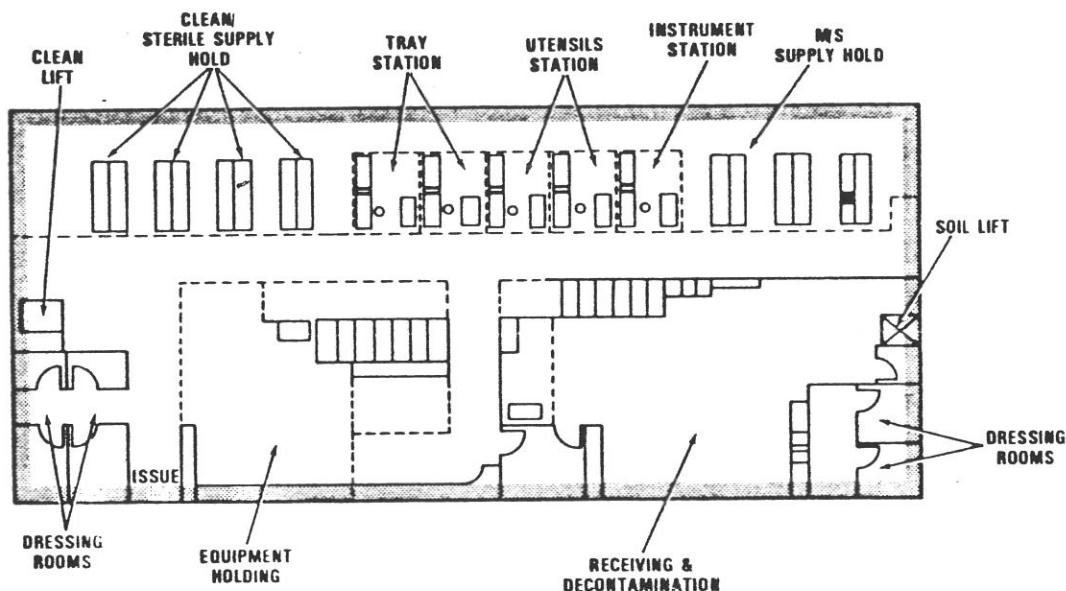
(1) Located on the 01 level at compartment 01-54-01, directly above the Operating Complex, it has a closed loop materials movement system of clean and soiled cart lifts to and from the complex. It is organized so that the decontamination area for receiving soiled goods is physically isolated from the clean assembly and packaging area for materials returning to surgery and the wards.

(2) The receiving and decontamination area is equipped to accommodate 2 manual washing areas with double sinks. Fine cleaning of instruments occur in a sonic cleaner, and all reprocessed items are passed through sterilizers to the assembly and packaging area. Steam sterilizers are provided for this purpose. For occasional items not appropriate for sterilizer treatment (i.e., fiberoptic instruments), a pass-through window to the clean side is provided. Holding space for carts, sterilizer carriages, linen hampers and trash receptacles are provided.

(3) The assembly and packaging area includes 5 work stations for instrument, tray and utensil packaging with a complement of supply carts to support these functions. Terminal steam sterilizers provide final sterilization prior to storage. Shelving for both reprocessed and disposable sterile supplies are provided.

(4) Dressing and toilet facilities for male and female staff provided in both the clean and soiled sides of the service to support appropriate sterile technique.

## CENTRAL STERILE RECEIVING



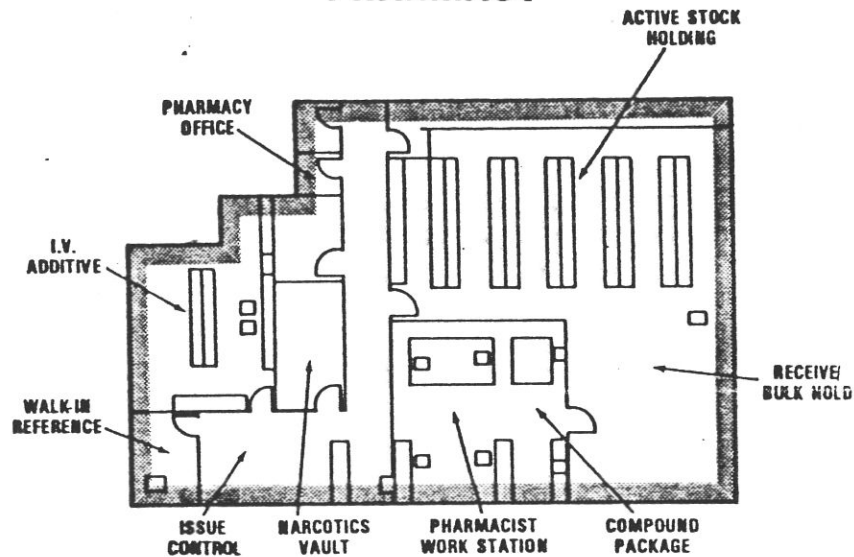
5-18

k. **Special Gases and Piping.** Oxygen and suction are hard piped to outlets located at each bed in the Operating Rooms, Recovery Room, ICU, and Casualty Reception. Oxygen is provided in all other areas by use of portable gas cylinders stored in compartment 01-74-3, Medical Gas Holding, and on the 02 level starboard weather deck. Suction is provided in other areas by means of mobile or portable suction machines prepositioned in various areas. Charging stations are provided for recharging the O2 cylinders. Capability is provided to recharge a sufficient number of cylinders to meet O2 requirements in all areas of the hospital not serviced by hard-piped O2.

1. **Pharmacy.** All pharmaceutical supplies for the hospital facility are stored in one central location with the exception of intravenous (IV) solutions. The pharmacy services are based on a bulk issue distribution system. The pharmacy also contains facilities for an IV admixture. It is located in compartments 01-68-0 and 01-65-0 in close proximity to the Operating Complex and ICUs with convenient access to all other wards.

(1) An open area is provided to hold bulk supplies. Active stock is held in units of issue on shelving near the Pharmacist work stations. An area for compounding and packaging is also provided. Narcotics are stored in a vault in the center of the service for maximum control and supervision. An administrative office is located near this vault. A separate clean room is provided for preparation of IV solutions with additives. A work counter and storage shelving is included. A walk-in refrigerator is available for storage of prepared solutions.

## PHARMACY

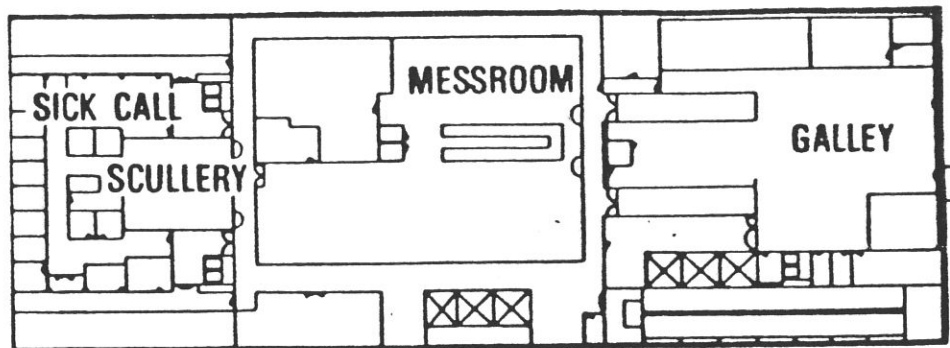


5-19

(2) An administrative area for issue control and reference information is located central to the IV prep, active stock, narcotics vault and work stations for convenient communication to all of these areas. An issue window to the outside passageway speeds the delivery of high priority, immediate drug needs from the Pharmacy.

m. **Sick Call Clinic.** A sick call clinic at 02-54-0 is provided separate from other hospital facilities with convenient access for the ship's staff. Eight examination spaces, two enclosed by joiner bulkheads for complete privacy and equipped for pelvic examinations and six cubicle positions are available. Two additional cubicled patient positions are provided adjacent to the nurses' station for observation. Two patient toilets are provided.

## 02 LEVEL



5-20

(1) The nurses' station is centrally located to all patient exam spaces and includes areas for charting, medications, medical supplies, linen and soiled utility.

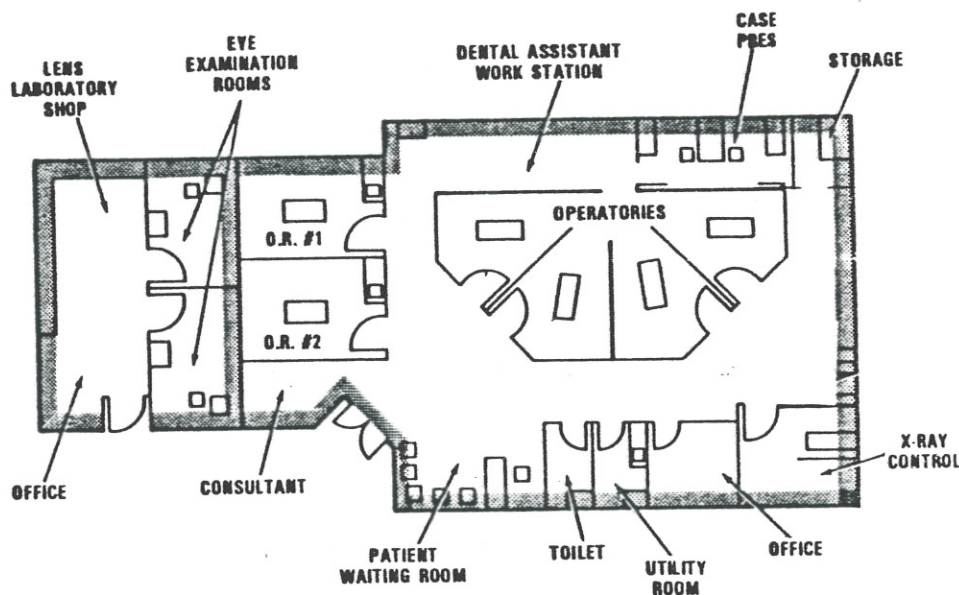


(2) An administrative and reception area for waiting, clerical work, and vertical file storage is provided.

n. Dental Service. The Dental Service is located on the first platform between frames 33 and 40 in hold #1. This service is capable of providing dental examinations, oral surgery, general dentistry, limited repair and production of dental prosthetics, and follow-up treatment of oral surgery patients. It consists of four dental operatories, 2 dental operating rooms and scrub alcove, two X-ray areas (one standard X-ray machine and one Panorex X-ray machine), reception and waiting area, consultation room and dental office, including provisions for record storage.

## LENS LAB

## DENTAL SERVICE



5-21

o. Lens Laboratory. Located in compartment 2-41-0 on the first platform just aft of the Dental Service, this service provides routine and special examinations to both patients and staff, evaluates disorders of the eye and prescribes corrective lenses to patients or consultation with other departments. Two examination rooms are provided as well as space to accommodate single vision lens fabrication equipment and an office.

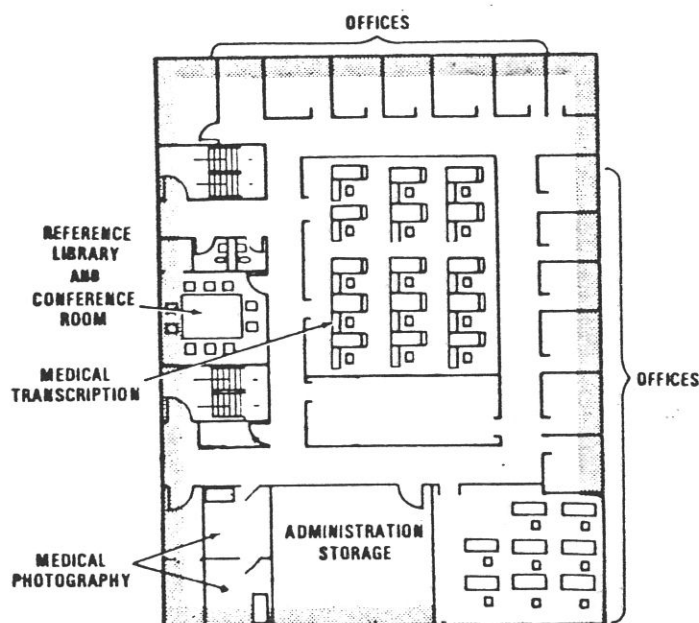
p. Morgue. A refrigerated Morgue facility is provided in compartment 03-38-0. It can accommodate 22 bodies. A high temperature alarm is provided. This facility is isolated from all other areas of the ship and has convenient access to the helicopter landing platform. (See figure 5-6).

### 5.3 Ancillary Support Services.

a. Hospital Administration. Facilities for Hospital Administration are located on the first platform in compartment 2-78-0 Hold 6. This area accommodates all hospital management staff including medical staff and nursing

management. All major department offices are located in this space and all clerical support is centralized here. Two private offices are provided with the remainder of the personnel being accommodated at workstations in an "open plan" arrangement without partitions. A conference room for 12 is provided along with staff toilets and a storeroom. Basic office equipment, including shelving for a medical library, and file cabinets for medical records are provided. Automated data processing equipment (SNAP II) will be located in this area. Other office space for supervisors of ICU/Recovery (1), Wards (3), Operating Complex (1), Radiology (1), Casualty Reception (1), and Food Service (2) are located in close proximity to these services.

## HOSPITAL ADMINISTRATION/MEDICAL PHOTOGRAPHY



5-22

b. **Medical Photography.** This service is located in compartment 2-82-1, adjacent to the Hospital Admin Complex. It consists of a workroom and darkroom. A desk, chair and microscope with camera system is provided in the workroom and a photo workbench, double-deep sink, and safelight are included in the darkroom. Additional photographic equipment will be provided by Naval Air Systems Command.

c. **Medical Supply.** This service is located on the 01 Level in compartment 01-41-01 just forward of Central Sterile Receiving. It is responsible for receipt, storage, break-out and issue of medical supplies and equipment. It consists of two large centralized holding areas, and smaller, decentralized areas throughout the ship, most are close to the user areas. These areas are identified as "Utility Room", "Medical/Surgical Supply" or "Supply Issue Room". This decentralized arrangement minimizes the use of elevators during

time of receiving incoming wounded. The arrangement of the Medical Supply Service provides convenient access to all users, particularly Central Sterile Receiving for the supply of the Operating Complex.

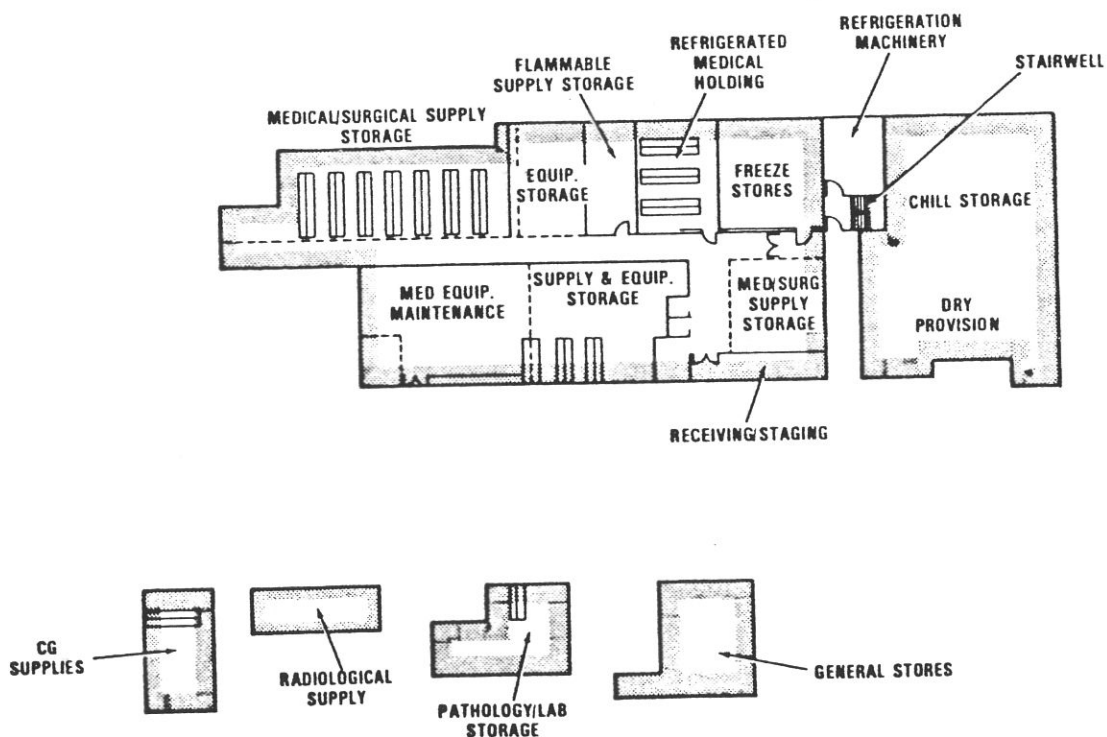
(1) A pallet staging area for bulk supplies is provided at the receiving point of the department. A receiving office is located at this area. Supplies for the Pharmacy are delivered directly to that department for bulk storage. Stock intravenous solutions are stored in bulk in a separate storage compartment near the Pharmacy.

(2) Shelving is provided for holding medical-surgical supplies stored in cases or units of issue. The decentralized supply holding rooms at the wards, ICU and Casualty Reception have similar shelving. A set of carts are provided to facilitate replenishment of these areas from Medical Supply.

(3) Enclosed space is provided for new or backup equipment holding, flammable medical supplies and supplies requiring refrigeration. Other storage in this area include: laboratory supplies, radiology supplies, cleaning gear and general stores.

(4) Access to the Medical Supply area is provided by a one-way fork lift passageway pattern from the unrep receiving area on the 01 level, as well as by elevator or ramp from the helicopter landing deck.

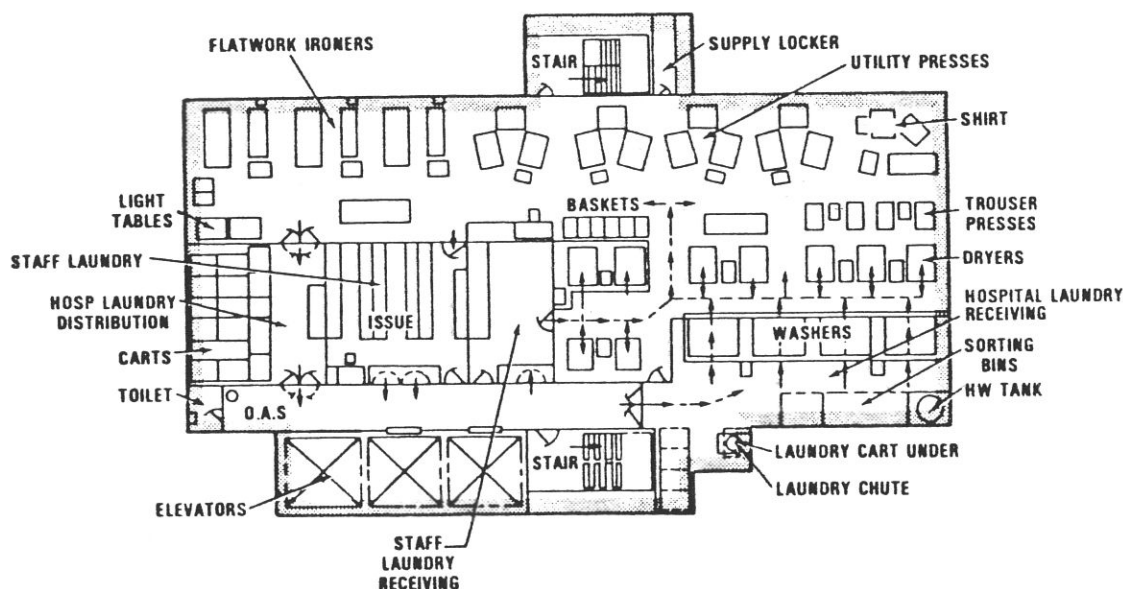
## MEDICAL SUPPLY SERVICE & MEDICAL REPAIR



d. **Medical Repair.** Space is provided in Medical Supply for the Medical Repair Service. This includes biomedical engineering services, general maintenance and spare parts storage. An electronic workbench is provided in an open shop design with the capability to designate certain areas for equipment screening, biomedical (electronic) repair and general maintenance. Test equipment for screening as well as repair equipment, tools and spares parts are provided. Shelving and cabinets hold spare parts and equipment awaiting repair.

e. **Laundry.** The ship's main laundry is located in compartment 3-33-0 on the 2nd platform, Hold 1. This facility is equipped to process laundry at a rate of 470 pounds per hour or 45,120 pounds per week based on a 96 hour work week (13.7 hrs per day). This equates to 20.7 pounds of laundry per person per week. Dry cleaning services are not provided. A laundry receiving room and issue room are provided. In addition to the laundry spaces, hand irons and ironing boards are provided in the berthing compartments.

## LAUNDRY



5-24

f. **Food Service (Dietary).** The Food Service Department consists of the galley, bakery room, bread room, vegetable preparation room, meat preparation room, scullery, trash room, and officer, CPO and crew messrooms between frames 33 and 55 on the 02 level; the chilled, dry provisions and freezer stores between frames 33 and 41 on the 01 level and five intermediate and light care nourishment rooms. (See figures 5-14/15/20/21). All food service areas are equipped with overhead and bulkhead sheathing. The messing facilities are arranged to permit the smooth flow of traffic during meals. A serving time of less than two hours is expected for all personnel aboard during FOS. The Food Service department is at least as large as that found on an aircraft carrier, which could make it one of the largest afloat galleys in the Navy.

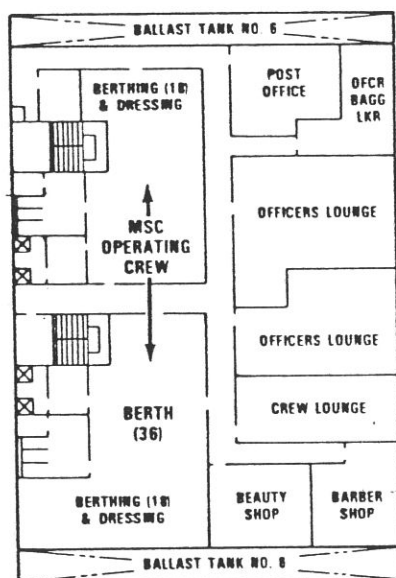
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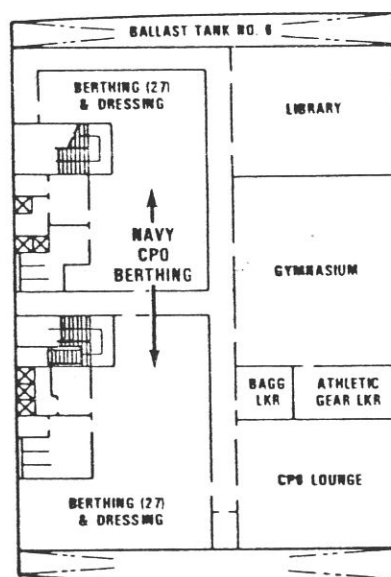
(1) All crew and limited care patients will mess in the main dining area. Bulk food is prepared in the galley and is delivered by cart to each intermediate and light care ward. Each cart will provide food for approximately 100 patients. Food will be reheated if necessary in the ward nourishment room and served individually, using glassware, dishes, cups, plates, flatware, etc. provided from the ward nourishment room. All utensils and dishes are cleaned and sanitized using the scullery in the nourishment room. The nourishment station itself is equipped with microwave, ice and refrigerator and is accessible from the wards on a 24 hour basis.

g. Gymnasium, Library and Athletic Gear Locker. These facilities are located on the third platform in Hold 6. They are available to the entire crew and patients. The gymnasium contains physical fitness equipment such as universal gym, indoor bike exerciser, weights, and treadmill.

## 2ND PLATE



## 3RD PLATE



5-25

h. Post Office, Barber and Beauty Shops. The Barber Shop and Beauty Shop are located on the second platform in Hold 6. Each can accommodate 3 patrons. The Beauty Shop also has 3 professional style hair dryers. Also located in this area is the Ship's Post Office which controls and distributes mail for the entire ship during FOS.

i. Ship's Store. The ship's store is located in compartment 02-48-1 near the messroom. It is outfitted with display shelving, a showcase, cash register stand, counter, wire paperback book rack and ice cream machine.

**APPENDIX B:**

**HISTORY OF T-AH HOSPITAL SHIP NAMES**

## APPENDIX B: HISTORY OF T-AH HOSPITAL SHIP NAMES

### 1. History of Hospital Ships with Name of "MERCY".

The first MERCY (AH-4) was built in 1907 as SARATOGA by William Cramp & Sons, Philadelphia, PA for the Ward Steamship Line of New York City. After use as an Army troop transport ship during the first months of World War I, the ship was purchased by the Navy from the War Department on 27 September 1917. She was renamed MERCY 30 October 1917, converted to a hospital ship at the New York Navy Yard, Brooklyn and commissioned 24 January 1918.

#### PRINCIPAL CHARACTERISTICS OF MERCY AH-4

Length Overall.....	429 ft.-10 in.
Beam.....	50 ft.-2 in.
Draft.....	23 ft.-4 in.
Displacement.....	9,450 Long Tons
Sustained Speed.....	15 KNOTS
Complement.....	420
Ship Class.....	MERCY

MERCY was assigned to the Atlantic Fleet and operated in the Chesapeake Bay area with Yorktown, VA as her homeport, as she attended the war wounded and transported them from ships to shore hospitals. In October 1918, she sailed for New York to join the Cruiser and Transport Service. On 3 November 1918, the ship departed New York on the first of four round trips to France, where she returned 1,977 casualties by 25 March 1919.

For most of the fifteen years following World War I, MERCY served off the east coast with Philadelphia as her homeport. From 1 December 1924 until 1 September 1925 she was in reserve at the Philadelphia Navy Yard. On 25 November 1925 the ship went into reduced commission, returning to full commission 1 September 1926. MERCY remained in commission until she was loaned to the Philadelphia Branch of the Public Relief Administration 23 March 1934.

On 20 April 1938 MERCY was struck from the Navy Register and was sold for scrapping to the Boston Iron and Metals Company, Baltimore, MD, 16 March 1939.

The second MERCY (AH-8) was laid down under a Maritime Commission contract by Consolidated Steel Corporation, Wilmington Yard, CA, 4 February 1943. She was acquired by the Navy from the Maritime Commission 25 March 1943, was launched the same day and was sponsored by LTJG Doris M. Vetter, NC, USN, who had been a prisoner of war on Guam in 1941. The ship was converted from a cargo ship to a hospital ship by Los Angeles Shipbuilding and Drydock Company, San Pedro, CA, and commissioned 7 August 1944, Captain Thomas A. Esling, USNR, in command.

After shakedown beginning 17 August 1944, MERCY, staffed by the Army's 214th Hospital Ship personnel, was assigned to the Navy Transport Service to operate with the 5th and 7th Fleets. She departed San Pedro 31 August 1944 for the South Pacific, and, after calls at Pearl Harbor and Eniwetok, arrived at Hollandia, New Guinea on 14 October 1944. Five days later she departed for the Phillipines for the initial landing at Leyte 20 October, arriving off the

Leyte Gulf the morning of 25 October to find the Battle for Leyte Gulf raging for another day.

#### PRINCIPAL CHARACTERISTICS OF MERCY AH-8

Length Overall.....	416 ft.-0 in.
Beam.....	60 ft.-2 in.
Draft.....	24 ft.-6 in.
Displacement.....	11,250 Long Tons
Sustained Speed.....	15.3 KNOTS
Complement.....	516
Ship Class.....	COMFORT

MERCY moved to San Pedro Bay, Phillipines later the same day and began embarking about 400 casualties, mostly from LSTs alongside. On 26 October she sailed for the Admiralties via Kossol Roads, Palans, Carolines, and arrived at Manus to disembark the wounded for transfer to Base Hospitals. During the next five months, MERCY completed seven more voyages from Leyte to Manus or Hollandia. She also transported the 3rd Field Hospital from New Guinea Tacloban, Phillipines early in January 1945.

On 19 March 1945, MERCY reported to the 5th Fleet at Ulithi, Carolines for services during the Okinawa campaign, beginning with the landings on 1 April. She arrived off Okinawa the morning of 19 April in company with USS SOLACE (AH-5) where she remained for four days at Hagushi Beach embarking patients despite frequent air raids and the threat of Kamikazes. MERCY got underway for Saipan, Marianas 23 April. She made two more voyages to Okinawa returning from the latter 24 May.

MERCY next carried wounded from Leyte and Manila on two voyages to Biak, Schouten Islands, returning to Manila 23 June 1945 for two months' duty as Station Hospital Ship. On 19 August she embarked the 227th Station Hospital assigned to the Korean Occupation Forces and three days later departed for Korea via Okinawa arriving at Jinsen 9 September.

On 19 October 1945, MERCY sailed for Manila and San Pedro, CA, arriving 17 November. She got underway for the central pacific 4 February 1946, arriving Pearl Harbor 12 February for duty until 2 April, when she returned to California.

MERCY was decommissioned at San Francisco 17 May 1946, was delivered to the War Department the Same day and transferred to the U.S. Army 20 June for further service as a hospital ship. On 25 September, she was struck from the Naval Register.

MERCY received two battle stars for World War II service.

## 2. History of Hospital Ships with Name of "COMFORT".

The first COMFORT (ex USAT HAVANA) was built in 1906 by William Cramp & Sons, Philadelphia, PA, as HAVANA. The ship was transferred from the War Department on 17 July 1917 and outfitted at the New York Navy Yard by John M. Robins Company, Brooklyn, NY. She was renamed COMFORT 14 March 1918 and commissioned 18 March 1918, Medical Inspector C. M. Oman, USN, Commanding.

### PRINCIPAL CHARACTERISTICS OF COMFORT AH-3

Length Overall.....	429 ft.-10 in.
Beam.....	50 ft.-2 in.
Draft.....	26 ft.-4 in.
Displacement.....	10,102 Long Tons
Sustained Speed.....	18 KNOTS
Complement.....	318
Ship Class.....	COMFORT

After serving from 24 July to 5 October 1918 as a floating hospital in New York City, COMFORT joined the Cruiser and Transport Force, Atlantic Fleet to return wounded personnel from Europe. In three voyages she brought home 1,183 men from France, Britain and the Azores. She sailed from Charleston, SC 9 June for repairs at Mare Island, CA, 1 April 1925.

The second COMFORT (AH-6) was launched 18 March 1943 by Consolidated Steel Corporation, LTD, Wilmington, CA, under a Maritime Commission Contract and was sponsored by 1st LT. E. Hatchitt, USAMC. The ship was transferred to the Navy the same day and converted to a hospital ship by Bethlehem Steel Company, San Pedro, CA and commissioned 5 May 1944 with CDR H. F. Fultz, USN, commanding.

COMFORT operated throughout World War II with a Navy crew and Army medical personnel. She sailed from San Pedro 21 June 1944 for Brisbane, Australia and Hollandia, New Guinea. Operating from Hollandia, the ship evacuated wounded from Leyte, Phillipines on two voyages in October and November and brought patients back to San Pedro, CA in December. Following a voyage to Subic Bay and Lingayen Gulf, Luzon for evacuees in March, the hospital ship stood off Okinawa from 2 to 9 April, receiving wounded for evacuation to Guam. On 23 April she departed for Okinawa, where on 30 April she was struck by a Japanese suicide plane which killed twenty-eight persons (including six nurses) and wounded forty-eight others, causing considerable damage. After temporary repairs at Guam, COMFORT sailed for Los Angeles, CA, arriving 28 May 1945.

### PRINCIPAL CHARACTERISTICS OF COMFORT AH-6

Length Overall.....	417 ft.-9 in.
Beam.....	60 ft.-0 in.
Draft.....	27 ft.-8 in.
Displacement.....	6,000 Long Tons
Sustained Speed.....	14 KNOTS
Complement.....	233
Ship Class.....	COMFORT

COMFORT arrived in Subic Bay 5 September 1945 and served as Station Hospital Ship until 11 October. Following a voyage to Okinawa, she sailed for

home by way of Yokohama and Guam, reaching San Pedro, CA 11 December. She made another voyage to Manila, Yokohama, Inchon, Korea and Okinawa between 1 January and 4 March 1946 before being decommissioned in San Francisco 19 April 1946. She was transferred to the Army the same day.

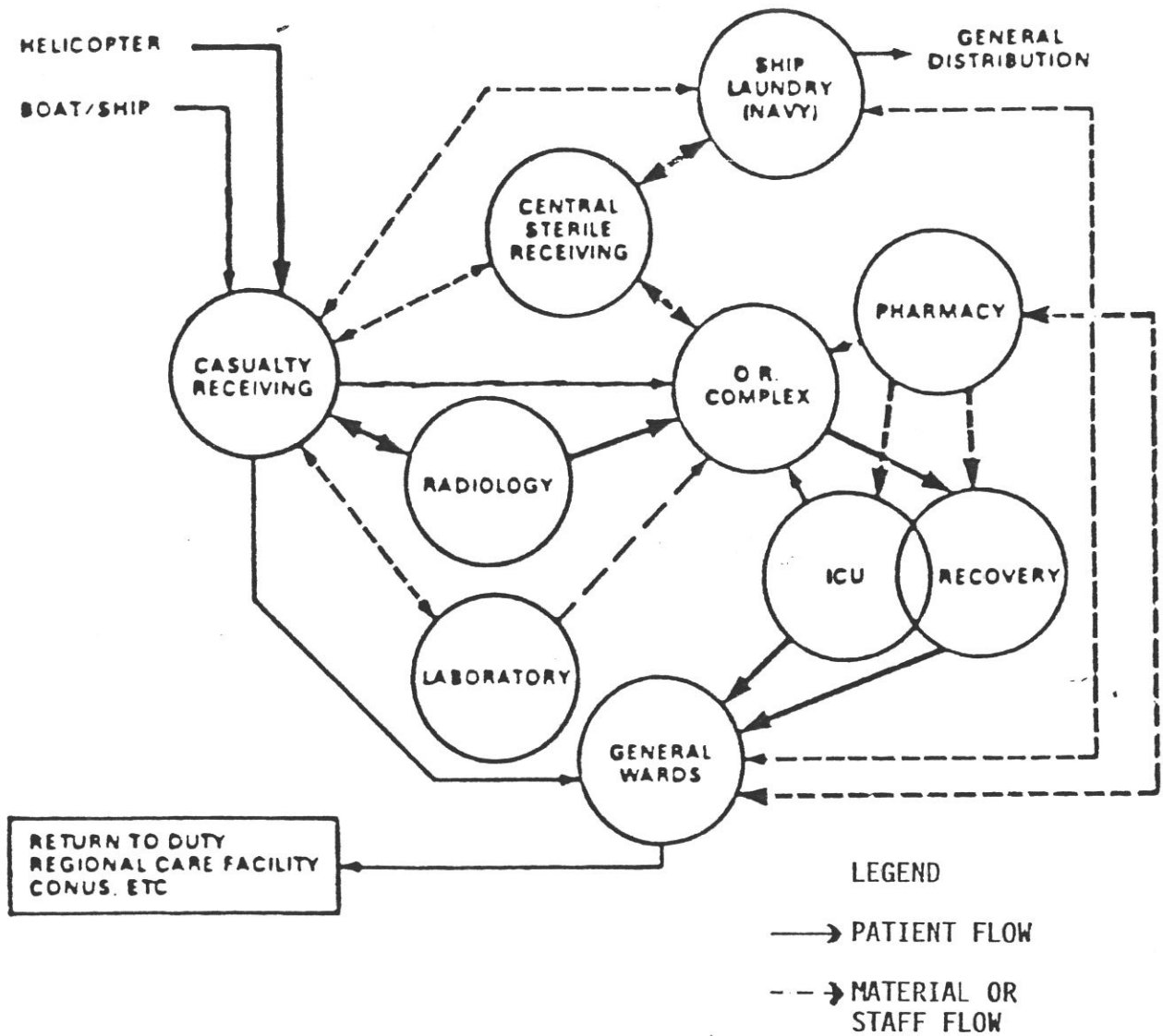
COMFORT received two battle stars for World War II service.

-- Compiled from Naval Archive records. --

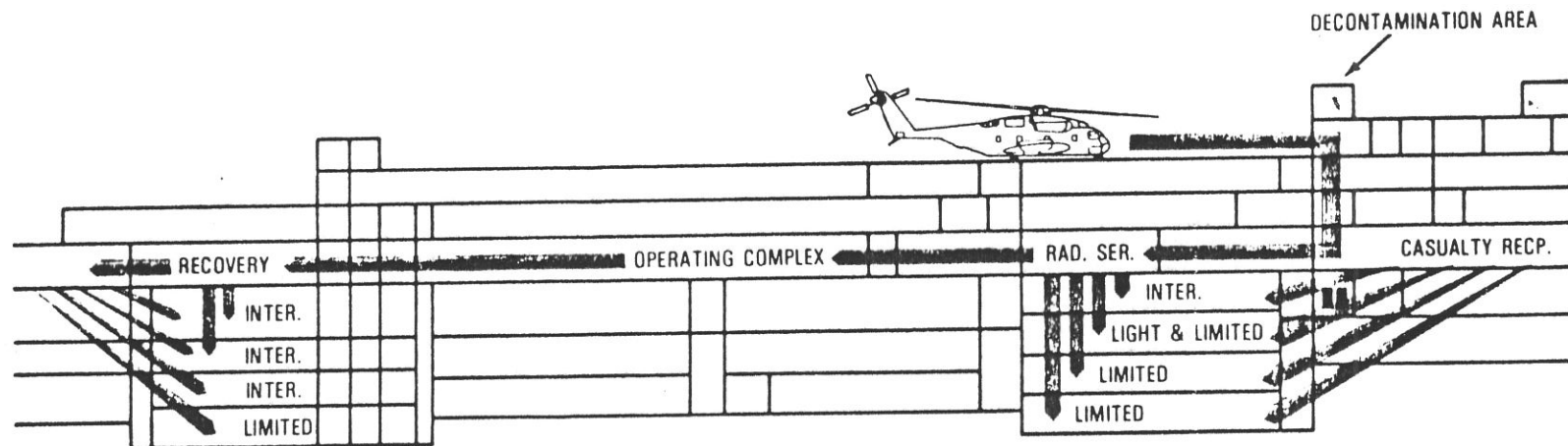


**APPENDIX C:**  
**TRAFFIC FLOW CHARTS**

# TRAFFIC FLOW



# PATIENT TRAFFIC FLOW



■ PATIENTS ARRIVING BY BOAT WILL ENTER THROUGH THIS SIDE PORT

■ PATIENT FLOW

**APPENDIX D:**  
**DECK ARRANGEMENTS**

# DECK ARRANGEMENTS BY HOLD

<u>HOLD #1</u>	<u>HOLD #2</u>
	<u>04 Level</u>
Bridge	
	<u>03 Level</u>
Decontamination Station	Helicopter Deck
Armory	
Morgue	
	<u>02 Level</u>
Galley	Messhall
	Ship's Store
	<u>01 Level</u>
Food Service Freezer	Medical Supply
Dry Provisions Storeroom	Medical Repair
Chilled Food Storeroom	General Service Storeroom
Medical Supply Chilled Storeroom	
	<u>Main Deck</u>
Casualty Reception	Casualty Reception
	Radiology Service
	<u>1ST Platform</u>
Port Access and Decon Station	Intermediate Care Ward (2-44-0)
Dental Service	
Lens Lab	
	<u>2ND Platform</u>
Laundry	Limited Care Ward (3-43-0)
	Light Care Ward (3-47-0)
	<u>3RD Platform</u>
	Limited Care Ward (4-43-0)
	Limited Care Ward (4-47-0)
	<u>4RD Platform</u>
	Limited Care Ward (5-43-0)
	Limited Care Ward (5-47-0)

DECK ARRANGEMENTS BY HOLD

HOLD #3

Sickcall  
Scullery

Central Sterile Receiving

Satellite Laboratory

Officer Berthing

Officer Berthing

Crew Berthing

HOLD #4

Ø2 Level

O2N2 Plant

Ø1 Level

Pharmacy

Main Deck

Operating Complex

1ST Platform

Crew Berthing

2ND Platform

Crew Berthing

3RD Platform

Crew Berthing



# DECK ARRANGEMENTS BY HOLD

## HOLD #5

AMAL Storeroom

Main Labortory

Recovery Room  
Physical Therapy

Intermediate Care Ward  
(2-71-01)

Intermediate Care Ward  
(3-71-01)  
Intermediate Care Ward  
(3-71-02)

Intermediate Care Ward  
(4-71-01)  
Light Care Ward  
(4-71-01)

Limited Care Ward  
(5-71-1)  
Limited Care Ward  
(5-71-2)

## HOLD #6

### 02 Level

AMAL Storeroom

### 01 Level

Administrative Support Offices

### Main Deck

Intensive Care Ward

### 1ST Platform

Hospital Administration

### 2ND Platform

Operating Crew Berthing

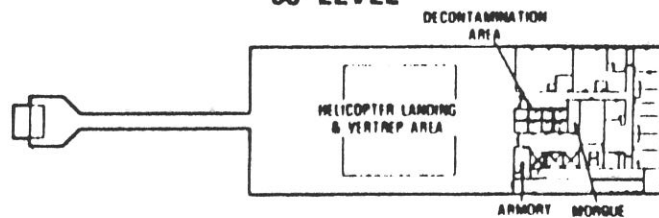
### 3RD Platform

CPO Berthing

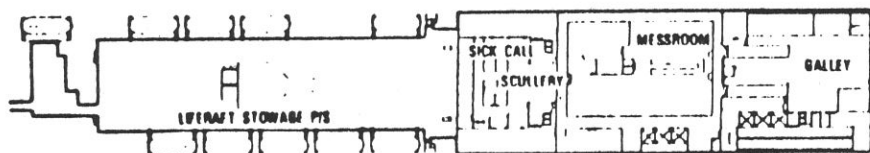
### 4RD Platform

# DECK ARRANGEMENTS

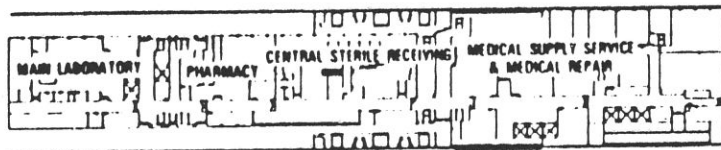
03 LEVEL



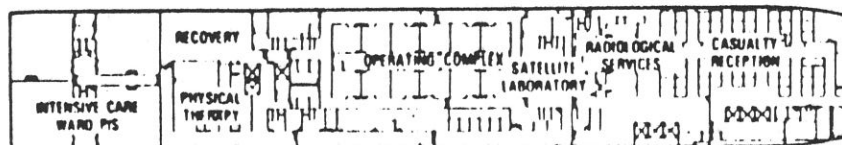
02 LEVEL



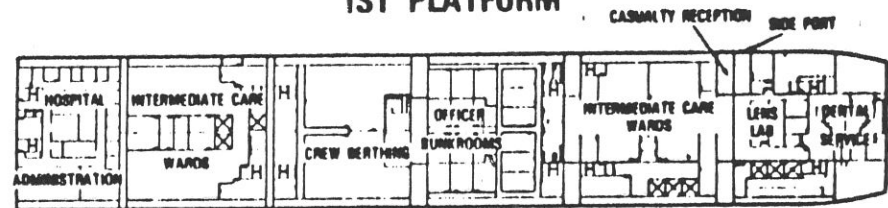
01 LEVEL



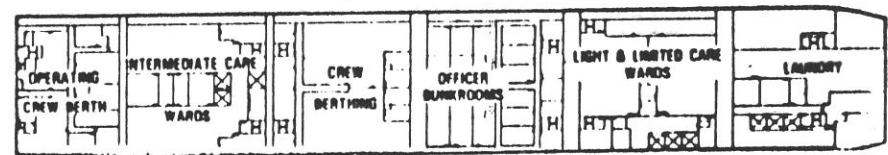
MAIN DECK



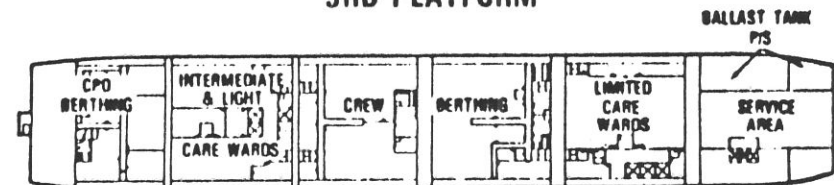
1ST PLATFORM



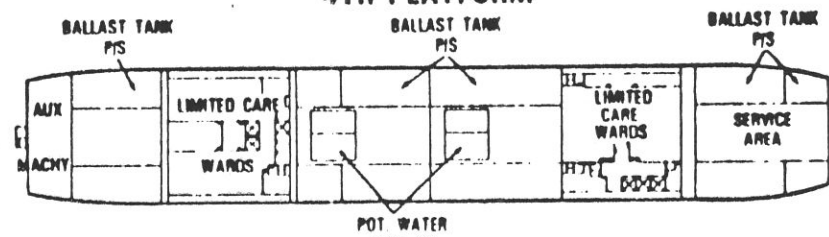
2ND PLATFORM



3RD PLATFORM



4TH PLATFORM



**APPENDIX E:**

**BIBLIOGRAPHY**

## BIBLIOGRAPHY

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Various communications and conversations with NASSCO, SUPSHIP and MSC personnel

**APPENDIX F:**  
**PROPOSED SCHEDULE OF EVENTS**

PROPOSED SCHEDULE OF EVENTS

	USNS MERCY (T-AH 19)	USNS COMFORT (T-AH 20)
BUILDERS TRIALS	APRIL 4, 1986	SEPTEMBER 5, 1986
ACCEPTANCE TRAILS	OCTOBER 27, 1986	APRIL 1, 1987
DELIVERY		
PROPOSED	DECEMBER 15, 1986	MAY 15, 1987
CONTRACT	FEBRAURY 8, 1987	NOVEMBER 2, 1987
NAMING CEREMONY	MID NOVEMBER 1986*	MID JUNE 1987*

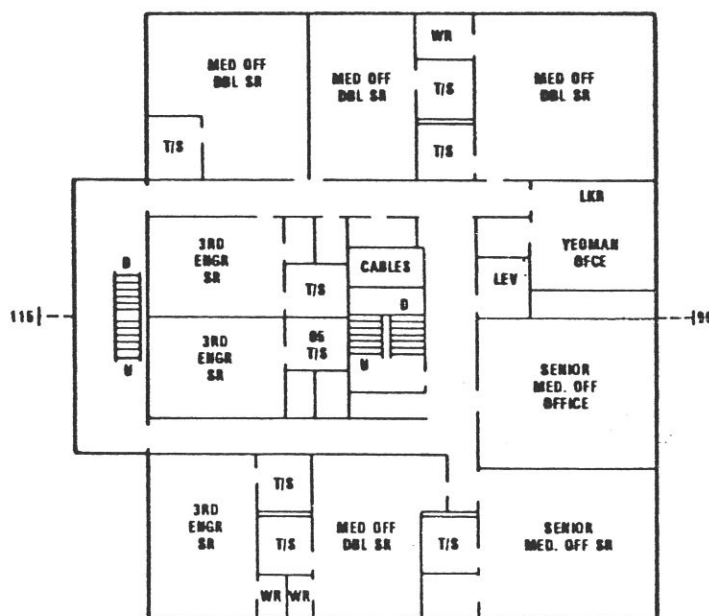
Dates are subject to change.



j. **Berthing.** The main crew berthing spaces are located in Holds 2, 3, and 6. Sufficient accommodation exist to house 264 Navy officers, 54 CPOs, 888 enlisted and 36 MSC crew in these areas. (See figures 5-25/26.) Also located in these areas are the crew lounges, writing rooms, game rooms and crew toilet facilities. Additional military and MSC officer berthing is available in the aft and the forward Deck Houses (9 military and 33 MSC berths).

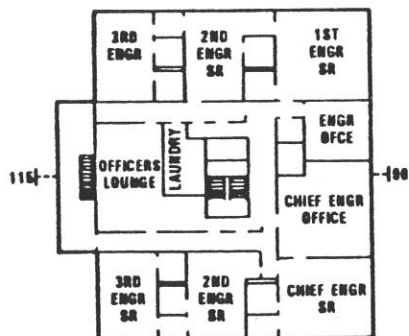
## 04 LEVEL

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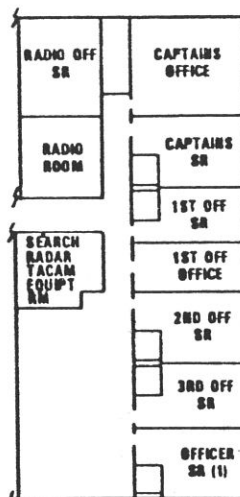


## 03 LEVEL

AFT



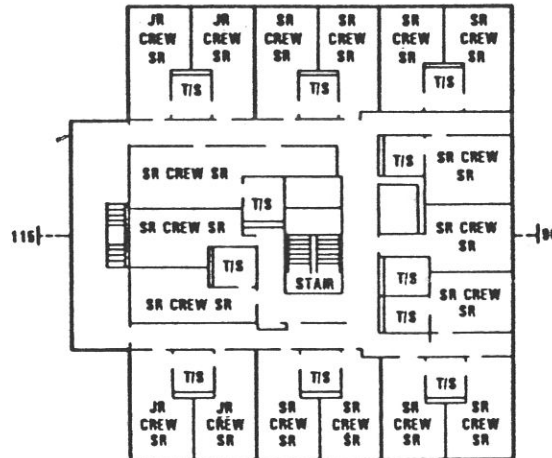
FORWARD



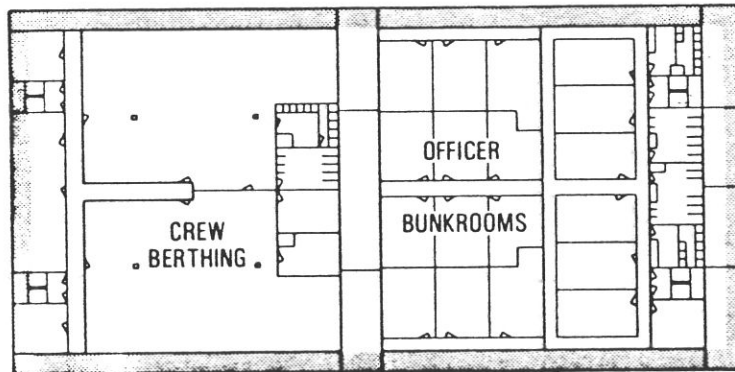
5-26a

## 02 LEVEL

AFT



## CREW BERTHING/OFFICER BUNKROOMS



Typical berthing in holds 3 and 4.

5-26b

k. **Helicopter Facilities.** Located on the 03 Level amidship, the ship is equipped with an aviation facility for the operation of CH-53E helicopters. This facility is classified as a Level 1 Class 2A Aviation Facility. (Level 1 - day and night flight operations in Instrument Meteorological Conditions. Class 2A - Aircraft landing area with limited service facilities.) The aviation facility does not provide hangars or maintenance capabilities. Helicopter support provided includes:

(1) Air Control capabilities for safe operations at specified casualty reception rate (300 patients max per 24 hour period). Air control includes positive control of helicopters operating in the air space around the ship while controlling helicopters arriving and departing the ship.

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(2) Flight deck services to support landing, casualty handling, and take off of the helicopter.

(3) Aircraft handling, firefighting, and crash rescue.

(4) Aircraft refueling on deck (air-flight refueling is not provided).

1. Navigation/Communication Systems. The navigation/communication systems installed on the ship are limited to those equipments that provide for:

(1) Safe navigation of the ship (radar, fathometer, satellite navigation system, etc.).

(2) Safe helicopter operations including positive control of helicopters (glide slope indicator, TACAN, communications, etc.).

(3) Communications to meet Military Sealift Command, U.S. Coast Guard, and Federal Communications Commission requirements for commercial ships of equivalent size.

(4) Navy communications for the exchange of voice, teletype, or data exchange with other ships, aircraft, or shore facilities in support of the T-AH 19 Class Hospital ships assigned mission.

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## 6.0 CONCEPTS

### 6.1 Maintenance Concept.

a. General. The maintenance concept for the T-AH 19 Class Hospital Ships is based on the ships being dockside in a Reduced Operation Status with a requirement to be able to get underway (fully operational) within five days. The concept is further divided in to the maintenance responsibilities of the three major groups of personnel and the equipment/systems assigned to each group during ROS and operational periods.

b. MSC Maintenance Concept. Equipment/systems designated for MSC maintenance will be maintained in accordance with standard MSC procedures by the MSC crew and at commercial industrial facilities ashore. During ROS, the MSC crew will maintain the basic ship, including the laundry, galley, and elevators, and will be responsible for the preservation and cleanliness of all military spaces, less the aviation support and O2N2 spaces. When the T-AH is fully operational, the MSC crew will be responsible for the maintenance of all equipment/systems and facilities not specifically assigned to the military crew.

(1) Organizational Level Maintenance - The MSC ROS crew will perform planned, corrective, and facilities housekeeping/maintenance in accordance with the ROS maintenance plans developed by MSC and technical manuals provided for operation and maintenance of equipment/systems. Corrective maintenance on ship's equipment/systems will be performed by MSC professional licensed engineers. Corrective maintenance beyond the capability of the MSC crew will be accomplished at commercial activities as voyage repairs as assigned by the MSC Port Engineer or deferred to regular overhaul periods.

(2) Intermediate Level Maintenance - MSC standards and policy specify that the T-AH will not use Navy intermediate maintenance activities, except in cases of mission degrading failure beyond the repair capabilities of ship's force or commercial activities.

(3) Depot Level Maintenance - Depot level maintenance will be performed at commercial industrial activities. It will consist of major ship alterations, USCG recertification, ABS reclassification, overhaul, and deferred maintenance requiring special tools, skills, or facilities beyond ship's crew capability. Depot level maintenance will include dry-docking for under water hull inspection and maintenance. The T-AH will be scheduled for industrial repair periods every two years and for dry-docking in accordance with USCG requirements.

c. **Medical Treatment Facilities.** The MTF maintenance concept is based on the requirements to maintain an afloat hospital facility in a ready status, with the ability to get underway and be fully operational within five days notice. MTF maintenance requirements will be accomplished by qualified military medical repair personnel assigned to the medical staff or MTF Support personnel. While the T-AH is in ROS, MTF equipment maintenance will be performed by the Navy Cadre crew.

(1) Organizational Level Maintenance - Organizational level maintenance will constitute the principal maintenance effort for meeting the operational readiness requirements for the medical systems and equipment installed in the MTF. When embarked, the medical staff personnel will perform planned, corrective, and facilities maintenance, in accordance with technical manuals provided for the operation and maintenance of systems and equipment and planned maintenance standards promulgated by NAVMED, and in keeping with standard NAVMED policies and procedures for the maintenance of U.S. Naval medical facilities. Both planned and corrective maintenance on MTF medical equipment will be performed by qualified Navy personnel and/or contractor support services, when the T-AH is in an operational status.

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(2) Intermediate Level Maintenance - None

(3) Depot Level Maintenance - None

d. **Medical Treatment Facility Support Facilities.** Maintenance for the MTF support facility will vary with the operational status of the T-AH. In ROS, the MSC crew will be responsible for maintenance of the galley, laundry, and other support facilities, including deactivated facilities. The flight deck and related fuel system and the O2N2 generating plant will be maintained by the Navy. During full operation, all MTF Support equipment/systems and spaces designated for military maintenance (i.e., flight deck, aviation fuel system, O2N2 plant, etc.) will be maintained by the MTF Support staff. Other MTF support equipment/systems (i.e., galley, laundry, etc.) will be maintained by MSC personnel

(1) Organizational Level Maintenance - Organizational level maintenance of the MTF support equipment/systems designated for maintenance by military personnel will consist of PM in accordance with 3-M system. CM will

consist of removal and replacement of onboard repair parts in accordance with the applicable technical manual and support facility's COSAL.

(2) Intermediate Level Maintenance - The use of IMAs for the routine accomplishment of intermediate level maintenance is not planned. The extended period of the ship(s) in ROS will provide adequate opportunity to accomplish required MTF systems intermediate level maintenance through contractor support, in conjunction with maintenance support of MSC responsible systems. Navy IMA services may be used, when deployed and adequate contractor services are not readily available.

(3) Depot Level Maintenance - Depot level maintenance will consist of Regulars overhaul and interim availabilities scheduled by MSC at commercial industrial facilities ashore. Overhaul will consist of repair, modification, alteration, modernization, and reclamation or rebuilding of parts, assemblies, sub-assemblies components, and end items; emergency manufacture on non-available parts; and providing technical assistance to using activities.

## 6.2 Training Concept.

a. General. The Navy Training Plan addresses the Manpower, Personnel and Training requirements for the military crew (MTF staff and MTF support staff) required for the T-AH 19. The training requirements for the MSC operational and ROS crews are the responsibility of the MSC. The Preliminary Ship Manpower Document and Manpower Authorization identify the MFT Medical and MTF Support staff personnel requirements for the T-AH. Upon issuance of deployment orders, the CNO, NMPC, and NAVMED will ensure that personnel who are properly trained are ordered to fill the shipboard billets. These personnel will be detailed to the ship from Continental U.S. shore based commands, as necessary to ensure the accomplishment of the T-AH 19 Class Hospital ship's assigned mission(s).

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(1) Due to the unique mix of personnel (civilian and active duty) and the required interface between the various staffs (MSC, Medical and Support), one training concept that will encompass the entire T-AH 19 Class Hospital ships crew does not exist. Each Staff requires a unique training concept designed to ensure the overall effective and efficient operation of the ship and accomplishment of the assign mission areas.

b. MSC Crew Training. MSC is responsible for the identification and accomplishment of all non-mission training required by the civilian crew. MSC/commercial standards and practices will apply to such training. The crew will require minimal non-mission training due to the ship's commercial design and conversion. Existing U.S. Navy schools and facilities will be utilized to the maximum extent for the training of designated members of the T-AH civilian crew in the underway replenishment and other mission areas. Related training material will be obtained by MSC for the retention of the civilian crew for use in conjunction with the training of replacement (reserve) crew personnel. In keeping with commercial practice, NAVSEA/MSC will furnish an outline of a Shakedown/Testing/Training Schedule to be followed once T-AH 19 is delivered.

c. Navy Cadre (ROS) Crew Training. The Navy Cadre Crew consists of personnel filling specific billets of both the MTF medical staff and MFT Support staff. These personnel will be assigned to the T-AH as permanent

active duty personnel. As such, the training concept for these personnel follow the guidelines established in OPNAVINST 3500.23B (Assembly, Organization and Training of Crews for U.S. Navy Ships Commissioned in Time of Peace) for training nucleus crew personnel for new construction ships.

(1) Initial Training - Each Cadre crew member will receive NEC/skill training required for his/her billet as enroute training during PCS transfer.

(2) Follow-on Training - Follow-on training for Cadre crew replacement personnel will be provided as enroute training as part of PCS orders by NMPC.

d. **MTF Medical Staff and MTF Support Staff Training.** The PSMD and MPA identify the medical and support personnel requirements for the T-AH 19 Class ship. CNO (OP-01), NMPC, and NAVMED will ensure that only properly training Navy medical and support personnel are assigned to T-AH billets.

e. **On-board Training.** On-board training for the T-AH 19 Class Hospital ships will consist of training cruises and personnel qualification standards.

(1) Training Cruises - The T-AH will deploy for training for about seven days at least once each year. During these cruises the ship will be fully manned by MSC but not medical personnel. Training evolutions will be conducted to exercise the crew in all aspects of the assigned mission areas. Drills will be conducted to train personnel in required team evolutions, such as, underway replenishment, vertical replenishment, damage control repair parties, etc.

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(2) Personnel Qualification Standards (PQS) - There are currently no personnel qualification standards required to support equipment to be installed on the T-AH 19 Class Hospital ships. Current PQS includes the following:

#### **NOMENCLATURE**

#### **NAVEDTRA #**

#### **PQS Supplementary Products**

PQS Managers Guide (7/79)

43100-1B

#### **3-M System (Surface)**

Ship's Maintenance and Material Management (3-M)  
Systems Qualification Standard (6/82)

43241D

#### **Mess Management Specialist (MS)/Answerbook**

Mess Management Specialist (MS) Qualification  
Standard (1/83)

43532

#### **Surface Warfare Officer**

Division Officer Qualification Standard (9/82)

43101-2B

#### **Helicopter Land/Launch Operations**

Shipboard Helicopter Qualification Standard (7/83)

43219



**Damage Control**

General Damage Control Qualification Standard (4/82)	43119-2C
Damage Control Emergency Parties Qualification Standard (2/83)	43119-3C
Damage Control Systems and Equipment Qualification Standard (12/81)	43119-4B
Division Damage Control Petty Officer Qualification Standard (4/82)	43119-5

**Oxygen/Nitrogen Producer Systems**

Oxygen/Nitrogen Producer Systems Qualification Standard (7/77)	43107A
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